Minnesota State Medical Association, 87th Annual Meeting, Rochester, Minnesota, April 22, 23, 24, 1940

MINNESOTA MEDICINE

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

PUBLISHED MONTHLY BY THE MINNESOTA STATE MEDICAL ASSOCIATION

APRIL, 1940

Volume 23 — Number 4 **40 cents a copy — $3.00 a year**

Contents

Entered at the Post Office in Minneapolis as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

Printed in U. S. A.

MINNESOTA MEDICINE

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 23 APRIL, 1940 No. 4

APICAL LUNG TUMORS OR SO-CALLED SUPERIOR PULMONARY SULCUS TUMORS*

HERMAN J. MOERSCH, M.D., H. CORWIN HINSHAW, M.D., Ph.D., and IRA H. WILSON, M.D.

Rochester, Minnesota

PANCOAST,[9] in 1924, called attention to a group of apical lung tumors which were associated with pain referred into the shoulder and arm of the affected side, and, in addition, to certain cervical sympathetic phenomena which produced a train of symptoms and findings suggestive of tumor of the spinal cord. Although, as early as 1838, the same group of findings had been described by Hare, little attention was paid to this interesting group of cases or to its possible etiologic significance. Pancoast was of the opinion that the tumors which give rise to this peculiar group of symptoms are pleural in origin, but he felt that, conceivably, the same condition might be produced by other conditions such as tumors of the spinal cord, meninges and neck, as well as by a cervical rib and vertebral neoplasm. Pancoast based his conclusions on a study of four cases, in three of which an exploratory surgical procedure was performed and in two of which biopsy was performed, but in none of which necropsy was performed.

In 1932,[10] Pancoast applied the term "superior pulmonary sulcus tumor" to this symptom-complex and enumerated its essential features as follows: (1) homolateral pain around the shoulder and down the arm, (2) atrophy of the muscles of the arm and hand, (3) Horner's syndrome, and (4) roentgenographic evidence of a small homogeneous shadow at the extreme apex of the lung, with always a variable amount of destruction of ribs locally and often vertebral infiltration. He came to the conclusion that it must be looked on as a distinct clinical entity. This conclusion was based on a review of his four original cases, one of which was discarded, and on four additional cases, in none of which biopsy or necropsy was performed. It is interesting to note that, without the addition of further material obtained for biopsy, he was now of the opinion that the tumors which produce this interesting condition were not pleural in origin, but rather were epithelial in origin and that most likely they originate from the fifth branchial arch. Owing to the absence of demonstrable metastasis, and owing to the absence of one or more of the characteristics that he had described, Pancoast dismissed the idea that the condition might be one of primary carcinoma of the bronchus or sarcoma of a rib.

A review of the literature reveals that the condition occurs infrequently, and that there exists considerable difference of opinion as to whether or not the condition can be looked on as a distinct clinical entity, or one of primary carcinoma of the bronchus. In order to determine, if possible, the exact nature of superior pulmonary sulcus tumor, a study is presented of all cases encountered at The Mayo Clinic during a period of ten years, from January, 1928, to December 31, 1937, inclusive, in which findings described by Pancoast as essential for such a diagnosis were encountered.

The comparative rarity of the condition was substantiated, in that only thirteen cases were encountered in which all the essential features of the disease were present. Four other cases are included in the study, as they possessed all the

*From the Department of Medicine (Moersch and Hinshaw) and The Mayo Foundation (Wilson—now residing in Worthington, Minnesota), Rochester, Minnesota.

features of the first group except for Horner's syndrome. A study of these latter four cases is of special interest, in our opinion, for it tends to disprove the contention that tumor of the superior pulmonary sulcus can be considered as a distinct clinical entity.

As in cases of primary carcinoma of the bronchus, tumor of the superior pulmonary sulcus was found to occur in the male more frequently than in the female; thirteen of our patients were males, and four were females. At no age does it appear that one is exempt from the disease. The youngest patient in our group was nineteen years of age, and the oldest seventy-two; the majority, however, were in middle age. The left apex was the favorite site of the tumor; it was involved in twelve cases. The right apex was involved in five cases.

Pain was by far the earliest and most annoying symptom. It usually begins near the shoulder and tends to spread down the arm and around the scapula, on the homolateral side. It is usually intermittent in character and generally is worse at night. Early in the course of the disease, especially before the development of Horner's syndrome on the same side, and before roentgenologic studies of the thorax have been made, the condition is often mistaken for "rheumatism," neuritis or even angina, and, when the pain is suspected of being of "rheumatic" origin, tonsillectomy for relief is not an uncommon event. The condition, as a rule, is rapidly progressive and disabling. Physical examination of the thorax is generally of very little value for the detection of a tumor in the lung early in the course of the disease, and the correct diagnosis may tax the diagnostic acumen of the most careful physician. Careful roentgenologic examination of the thorax is of utmost importance and is of very great aid in early diagnosis. However, Pancoast has pointed out the ease with which the early roentgenologic changes caused by the tumor may be overlooked.

Hemoptysis, which is such a frequent symptom in cases of primary carcinoma of the bronchus, occurs less frequently in association with tumor of the superior pulmonary sulcus. Only three of our seventeen patients related a history of expectoration of blood. Two of the patients had fixation of a vocal cord on the affected side, a condition which also was noted by Kelman and Schlezinger.

Tissue for microscopic examination was obtained in nine of the thirteen cases in which the characteristic findings of tumor of the superior pulmonary sulcus were present, and in three of the four cases in which Horner's syndrome was not present. In four of the cases, two from each of the aforementioned groups, respectively, necropsy was performed, and in all four cases findings were regarded as those of primary carcinoma of the bronchus with metastasis to other organs of the body. This latter observation is especially deserving of attention because Pancoast regarded such a finding as rare or not likely to occur. Microscopic examination of the tissue removed from the tumors was reported as squamous-cell carcinoma in three cases, and was not classified as to type in one of the cases in which Horner's syndrome was absent. In three of the thirteen typical cases, surgical exploration was performed. In each instance, the tumor was inoperable; evidence of invasion of the vertebræ or ribs was present. In two of the three cases, tissue was removed from the tumor, studied microscopically, and reported as adenocarcinoma, grade 4 (on the basis of 1 to 4), according to the Broders classification. In five other cases, biopsy was performed on supraclavicular lymph nodes overlying the apical tumor (four from the typical group and one from the atypical group), and of these five cases, four were cases of adenocarcinoma and one was a chondroma. This latter case will be described in detail.

It is not necessary to present all seventeen cases in detail. However, a few cases are given to illustrate the character of the lesion which we are describing, and to emphasize certain important features under consideration. Case 1 is typical of the group in which all the characteristic findings of superior pulmonary sulcus tumor were present.

Report of Cases

Case 1.—A white man, forty years of age, came to The Mayo Clinic for the first time in April, 1933; he complained of pain in the right shoulder and general weakness. The difficulty began nine months previously, soon after changing from a sedentary occupation to an active one. The difficulty was thought to be due to his change of work. The pain was sharp in character, constant in nature and definitely worse at night than during the day. The pain was of such severity that it interfered with rest and was associated with a loss of appetite and subsequently with loss of weight. Because of the character of the pain, a diagnosis of rheu-

matism was made elsewhere, and tonsillectomy was performed without benefit. The right arm gradually became weaker, and numbness and coldness developed in the second and third fingers of the right hand. At approximately the same time, drooping of the right eyelid and absence of sweating of the right side of the face were noted. Two weeks before coming under our care, the patient experienced a chill with fever and because of this a roentgenologic examination of the

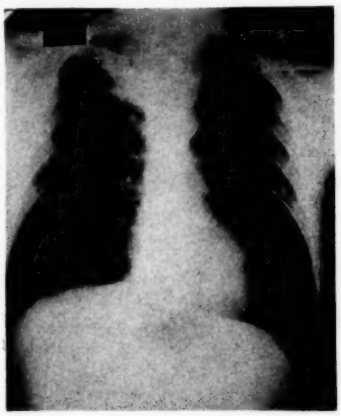

Fig. 1. Case 1. A typical case of superior pulmonary sulcus tumor.

thorax was performed; a shadow over the apex of the right lung was noted.

At the time of our examination, the patient appeared undernourished and was suffering with pain. Entophthalmia of the right eye was present, the right pupil was smaller than the left and a droop of the right lid with narrowing of the palpebral fissure was present (Horner's syndrome). There was fullness over the right supraclavicular region, a hard, nodular mass being present. There was a slight droop of the right shoulder. A slight degree of atrophy of the muscles of the right hand was noted. On percussion, dulness was elicited over the apex of the right lung, but otherwise the findings were essentially normal.

Roentgenologic examination of the thorax revealed a circumscribed shadow over the apex of the right lung. There was no apparent involvement of bone (Fig. 1). The laboratory tests, such as urinalysis, examination of the blood and flocculation tests, failed to reveal anything of diagnostic importance. The diagnosis of a tumor of the apex of the right lung (Pancoast type) was made. Roentgen therapy was administered and the patient was permitted to return home. He returned to the clinic again within a month and was without evidence of a change in symptoms or findings. An exploratory thoracotomy was performed May 26, 1933, and an inoperable carcinoma was found involving the posterior half of the apex of the right upper lobe of the lung with infiltration into the spine and ribs. The patient was permitted to return home and died five months later at home as a result of massive pulmonary hemorrhage.

Pancoast was insistent on the presence of Horner's syndrome on the affected side, as essential for the diagnosis of a tumor of the superior pulmonary sulcus. On this basis, he refused to accept the cases of Henderson which were presented to prove that the condition could not be a distinct clinical entity. Pancoast failed to realize that Horner's syndrome took place only with advance of the apical tumor or lesion until the cervical sympathetic chain on the homolateral side was involved. In one of his own cases, he noted that Horner's syndrome appeared only late in the course of the disease. We are in agreement with Stein that the presence of Horner's syndrome is only a manifestation of the degree of spread of an apical tumor; in no way is it related to a specific type of tumor occurring in the thoracic inlet. This observation is based on a study of four of our cases in which were present all the characteristics of a tumor of the superior pulmonary sulcus, other than Horner's syndrome. In two of the cases necropsy was performed and a primary carcinoma of the apex of the lung was found; in every respect the tumor resembled that encountered at necropsy in the two cases in which Horner's syndrome was present. In an additional case, a lymph node was removed from the supraclavicular fossa overlying the tumor in the apex and was found to be adenocarcinoma. Case 2 is illustrative of this group, and the similarity to the first case reported is readily apparent.

Case 2.—A white man, twenty-eight years of age, came to The Mayo Clinic, for the first time, November 18, 1938; he complained of pain in the left shoulder and arm. The pain had begun four and a half months previously. It was constant in character and was aggravated by motion. There was associated numbness of the anteromedial surface of the forearm. The pain was of such severity that it interfered with sleep and appetite. A diagnosis of neuritis was made elsewhere, and the tonsils were removed without benefit. A month before coming to the clinic, a diagnosis of Pancoast tumor was made, and roentgen therapy was administered with relief of pain for a period of three weeks.

At the time of our examination, the patient's blood pressure was 134 mm. of mercury systolic, and 84 diastolic. The pulse rate was 84 per minute and the temperature was 99.4° F. (37.4° C.). The patient held his head inclined toward the left side and fullness was noted over the left supraclavicular region but

definite lymph nodes were not palpable. The skin over the right shoulder was dusky in appearance from previous roentgen therapy. The strength of the left hand was not as great as that of the right hand. Lymph nodes were palpable in the left axilla. On percussion of the thorax, there was a slight increase in dulness over the left apex posteriorly. There was no evidence of Horner's syndrome. Physical examination otherwise gave essentially negative findings.

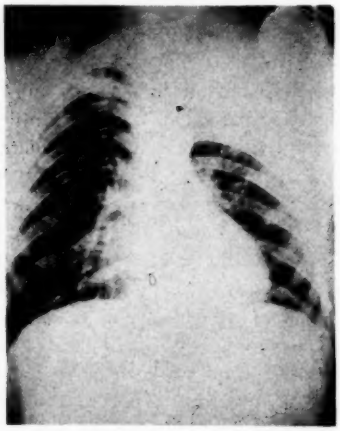

Fig. 2. Case 2. A case of superior pulmonary sulcus tumor without Horner's syndrome.

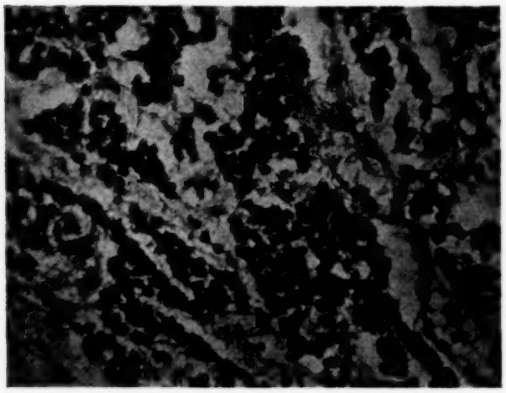

Fig. 3. Case 2. Small-cell carcinoma.

Roentgenologic studies of the thorax revealed a dense shadow over the left apex of the lung (Fig. 2). The urinalysis, blood studies and blood flocculation tests gave negative results. A diagnosis of tumor of the thoracic inlet was made. Roentgen therapy was administered. In spite of this, the patient's health failed rapidly and he died at home six weeks later. Necropsy was performed, elsewhere, and tissue was sent to us for study which showed a very malignant small-cell carcinoma which apparently was bronchial in origin (Fig. 3).

The point frequently has been made as to whether the lesions that occur at the apex of the lung are primary in nature or are secondary to carcinoma elsewhere, especially secondary to carcinoma of a bronchus close to the hilus. Metastatic lesions from other organs to the pulmonary apex have been reported by Evans, Frost and Wolpaw and others as causing the Pancoast type of tumor. The difficulty that may be experienced in determining whether an apical lesion is primary or not is well illustrated in Case 3.

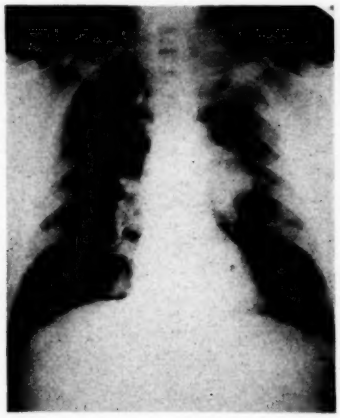

Fig. 4. Case 3. Shadow over apex as well as at hilus.

Case 3.—A white man, fifty-two years of age, was admitted to The Mayo Clinic in September, 1937, because of pain in the left shoulder. The pain had appeared three months previously and was of such severity that it made the patient "dance." The pain gradually was projected down the left arm and into the left ring finger. Two months after the onset, an absence of sweating in the region of the left shoulder was noted. A diagnosis of tumor of the spinal cord was made elsewhere, and an operation was advised. At the time of our examination, the patient appeared to be in considerable distress. His blood pressure was 162 mm. of mercury systolic, and 100 diastolic; the pulse rate was 78 per minute and the temperature was 98.6° F. (37° C.). The skin over the left shoulder was dry and shiny and the temperature over the area of involvement was less than normal. Hyperesthesia was found along the medial and posterolateral surfaces of the right arm. Horner's syndrome was present and the left eye was involved. Lymph nodes were palpable in the left supraclavicular region and in the left axilla.

There was an absence of sweating over the left shoulder and arm and over the left half of the face, scalp and thorax.

Roentgenologic examination of the thorax (Fig. 4) showed a circumscribed shadow of the left apex and also of the left hilus; there was also evidence of invasion of the contiguous portion of the lateral part of the second thoracic vertebra and the second rib. The other laboratory tests failed to reveal anything of diagnostic importance. A diagnosis of primary carcinoma of the bronchus was made and roentgen therapy was administered in intensive doses. In spite of this, the patient's condition rapidly became worse, and he died at home four months later. Necropsy was performed elsewhere, and was reported to us as revealing primary carcinoma of the lung with metastasis to the liver.

Fig. 5. Case 4. Degenerating chondroma.

Pancoast stated that the so-called superior pulmonary sulcus tumor was characterized by an absence of metastasis. Our experience has been at variance with this observation, however, and in accordance with that of Stein and Barton, namely, that metastasis occurs with great frequency. Nine of our patients had definite evidence of metastasis to lymph nodes, to the lung or to other organs of the body.

That lesions other than primary carcinoma of the bronchus may produce a picture similar to that described for a tumor of the superior pulmonary sulcus is well illustrated in Case 4.

Case 4.—A white man, forty-eight years of age, was seen by us for the first time in September, 1923. He complained chiefly of a swelling over the left side of the neck. This first appeared seven years previously and had especially increased in size during the last three years. Shortly before coming to the clinic he had noticed increased difficulty in swallowing, with a noticeable change in the quality of his voice.

On physical examination, a hard, firm mass measuring approximately 2 by 3 inches (5 by 7.5 cm.) was found in the left submaxillary and cervical regions.

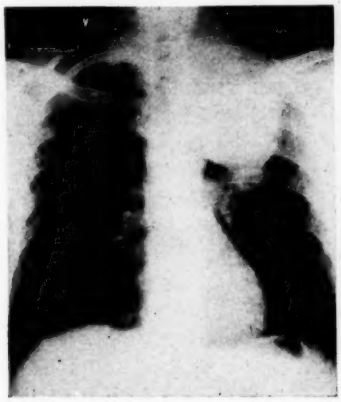

Fig. 6. Case 4. Tumor in left upper portion of the thorax.

The mass appeared attached to the hyoid bone. The mass produced a bulge into the lumen of the left wall of the pharynx, from the base of the tonsil down to the base of the tongue, pyriform fossa and along the posterior pharyngeal wall to the midline, obscuring the left half of the larynx and pushing the epiglottis over toward the right side. Roentgenologic examination of the lungs gave negative results. On September 20, 1923, the tumor was excised along with the left half of the hyoid bone. On microscopic examination, the tumor was reported as a degenerating chondroma (Fig. 5).

The patient returned to the clinic in November, 1931, because of pain in the left hand and thorax, numbness in the left forearm and hand, and a recurrence of the swelling in the lower submaxillary and cervical regions. The growth had developed during the past year. There was a slight but definite droop of the left eyelid. Roentgenologic examination of the thorax revealed a large tumor in the left upper portion of the thorax (Fig. 6) with multiple pulmonary metastatic lesions. In spite of roentgen therapy the patient failed rapidly and died soon afterward at home. Because necropsy was not carried out, some question may exist as to whether the recurrent growth was a new growth or a recurrence of the chondroma which had undergone malignant degeneration.

Comment

The prognosis for the patient who suffers from an apical pulmonary tumor is extremely grave. The great majority of such patients under our observation were dead within six months of the

time of our initial examination. Up to the present time, we have not found any form of treatment successful in dealing with the condition. In an occasional case, temporary relief was obtained through the use of roentgen therapy.

From a review of our experience we are forced to agree with Jacox, Steiner and Francis, Browder and DeVeer and others that the so-called superior pulmonary sulcus tumor cannot be a distinct clinical entity, and that it simply is indicative that a lesion situated in the apex of the lung which is in close proximity to certain nerves invades or compresses these nerves, giving rise to a characteristic train of symptoms designated by Pancoast as the superior pulmonary sulcus syndrome. The tumor that most commonly produces this symptom-complex is primary carcinoma of the bronchus. The term "superior pulmonary sulcus tumor" is not a justifiable term except when used to indicate only that the lesion or growth is limited to a distinct portion of the lung. We have seen the same symptom-complex occur when the growth is not situated in the apex, but in the hilus of the lung, and when tissue could be removed for microscopic analysis and could be demonstrated to be primary carcinoma of the bronchus.

References

1. Barton, E. M.: Carcinoma of the lung producing symptoms of "superior pulmonary sulcus tumor." Jour. A.M.A., 111:515-517, (Aug. 6) 1938.
2. Browder, Jefferson and DeVeer, J. A.: The varied pathologic basis for the symptomatology produced by tumors in the region of the pulmonary apex and upper mediastinum. Am. Jour. Cancer, 24:507-521, (July) 1935.
3. Evans, W. A.: Discussion. Jour. A.M.A., 83:1411, (Nov. 1) 1934.
4. Frost, T. T., and Wolpaw, S. E.: Intrathoracic sympathoblastoma producing the symptomatology of superior pulmonary sulcus tumor (Pancoast). Am. Jour. Cancer, 26:483-492, (Mar.) 1936.
5. Hare, E. S.: Tumor involving certain nerves. London Medical Gazette, 23:16-18, 1838.
6. Henderson, W. F.: Roentgen study of apical chest tumors. Am. Jour. Surg., 8:414-420, (Feb.) 1930.
7. Jacox, H. W.: Superior pulmonary sulcus tumor; further observations, with report of two additional cases. Jour. A.M.A., 103:84-87, (July 14) 1934.
8. Kelman, Harold, and Schlezinger, N. S.: Tumor of superior thoracic inlet (tumor of the superior pulmonary sulcus); clinicopathologic study. Arch. Path., 23:383-391, (Mar.) 1937.
9. Pancoast, H. K.: Importance of careful roentgen-ray investigations of apical chest tumors. Jour. A.M.A., 83:1407-1411, (Nov. 1) 1924.
10. Pancoast, H. K.: Superior pulmonary sulcus tumor; tumor characterized by pain, Horner's syndrome, destruction of bone and atrophy of hand muscles. Jour. A.M.A., 99:1391-1396, (Oct. 22) 1932.
11. Stein, J. J.: Apical lung tumors; further observations with report of seven additional cases. Jour A.M.A., 111: 1612-1617, (Oct. 29) 1938.
12. Steiner, P. E., and Francis, B. F.: Primary apical lung carcinoma. Am. Jour. Cancer, 22:776-785, (Dec.) 1934.

EARLY GASTRO-INTESTINAL CARCINOMA*

GEORGE EARL, M.D.
Saint Paul, Minnesota

CARCINOMA continues to climb toward top place as a recorded cause of death, having now reached second place. Of a total of 3,775 deaths from cancer in Minnesota in 1938, 1,928 were of the digestive tract and peritoneum. In the United States public health statistics for 1936, of the 146,613 deaths from carcinoma, 49,930 were recorded as gastro-intestinal. It is likely that gastro-intestinal cancer is more frequent than records show. Surgery undertaken for other diagnoses and postmortems on cases of undetermined diagnosis increasingly are revealing gastro-intestinal carcinomata as the primary site.

Early symptoms of gastro-intestinal cancer may be insidious and vague. When the patient comes with marked weight loss, secondary anemia, pain, a palpable mass, marked constipation with or without alternating diarrhea, and vomiting, we no longer have early carcinoma but an advanced stage.

It is in middle age and beyond that these cases most often arise, although no age is free. Beginning at the age of thirty-five, there was in Minnesota in 1937 a definite increase in incidence of cancer in each successive five years of age up to seventy, then a slight increase up to seventy-five, with a slight decrease in those living in the decade beyond. In judging age it is not years alone that count, but rather the physical age of the patient.

Just as in other diseases of insidious onset, for example, tuberculosis, we have in early gastro-intestinal carcinoma symptoms of tiredness, weakness, and slight weight loss. Sara M. Jordan, of the gastro-intestinal department of the Lahey Clinic, tells in the February 17, 1939, issue of the *Journal of the American Medical Association*, of two patients with complaints of

*Read before the Northern Minnesota Medical Association at Detroit Lakes, Minnesota, September 8, 1939.

tiredness and general run-down condition. They took extended trips, and on their return advanced carcinomata of the stomach were evident.

Cancer's early picture is not impressive. Christopher states, "A little indigestion in any patient over thirty years should be regarded seriously." Many urge that x-ray examination be made in every patient over forty-five years of age in whom "indigestion" has existed unrelieved, even though not treated more than a week. Moynihan points out a fallacy in even this, saying: "The improvement of symptoms during medical treatment in early cancer of the stomach is one of the causes of the high mortality of this disease."

Several writers have recently agreed that the early symptoms of gastric cancer are: (1) slight loss of appetite; (2) vague stomach consciousness as fullness or "gasiness" after meals; (3) slight, vague abdominal discomfort or pain; (4) hypochlorhydria; (5) occult blood in stool. They also noted that by the time any of the classical symptoms, as weight-loss, anemia, vomiting, and palpable tumor, appeared, it was often too late for curative surgical treatment. All emphasized that cancer of the stomach can mimic almost any gastro-intestinal disease. While benign ulcers of the stomach and duodenum usually make themselves known by very definite symptoms, carcinoma, the most serious of all stomach conditions, usually begins with very negligible symptoms.

Bleeding, of which the public is so conscious in urinary and genital conditions, is strangely often minimized in gastro-intestinal carcinoma. Blood in the vomitus is often ascribed to retching, and from the rectum to hemorrhoids. In indefinite histories where there is occult blood in the stool, its presence must be explained. While in gastro-intestinal carcinoma there may be no occult blood, and one must not be misled either by its presence or absence, yet persistent occult blood in the stools is a quite consistent finding in carcinoma of the gastro-intestinal tract. Too frequently the test is not used in patients who should be suspected of this lesion. It is simple and economical. Consideration must be given not only to the finding of blood, but also of pus and mucus. Such tests must be repeated within a relatively brief period.

Regarding examinations, it has been said that if, in examining a patient, you do not put your finger in the rectum you are apt "to put your foot in it." Osler said that a specialist is one who makes rectal examinations. This brings up, of course, the question of hemorrhoids. Insistence is for sigmoidoscopic examination either previous to scheduling a hemorrhoidectomy or at the time of the hemorrhoidectomy when the patient has been prepared. Of the 49,300 gastro-intestinal carcinomata reported in the 1936 government statistics, 7,300 were within finger reach, and another 7,000 in the sigmoid, therefore within relatively easy visualization through the sigmoidoscope. Direct visualization of the stomach through the gastroscope is becoming of increasing importance in gastric diagnosis. Abdominal palpation can never be too carefully made, and often it will reveal important findings to the examining fingers. Examination of the patient in a standing position may bring an upper abdominal mass, not felt in the horizontal position, down to where it can be palpated.

The determination of the sedimentation rate is an increasingly common laboratory procedure. Increased rate may or may not be present in early carcinoma, depending on inflammation accompaniment. The presence of bile even in small amounts seems to delay greatly sedimentation.

Hypochlorhydria is of questionable value and is found both in cancerous and non-cancerous conditions, although frequently in cancerous conditions there is a lower hypochlorhydria. Lactic acid and also the Opler-Boas bacillus occur with cancerous and non-cancerous conditions in the presence of stasis.

X-ray examination is the most accurate method of studying gastro-intestinal carcinoma that cannot be visualized or biopsied. The ability of x-ray to detect early lesions is at times amazing. Lesions as small as 1 cm. in diameter have been found and, even in the absence of definite lesions, slight changes in the mucosal pattern with almost imperceptible interference with peristalsis may give strong presumptive evidence. We have the actual picture of such a probable diagnosis by an x-ray man seeing a very small lesion in the stomach that is not palpable to the operating surgeon, and yet, on the roentgenologist's insistence on opening the stomach, there can be found a very small beginning gastric carcinoma. On the other hand, good x-ray men will miss early lesions of carcinoma of the gastro-intestinal tract, especially at the cardiac end of the stomach, in the cecum, and to a lesser degree in the remain-

ing bowel, et cetera. In a suspected case, as with unexplained occult blood or in one in which no diagnosis has been definitely made, reray must be done in the hope of picking up a lesion previously missed. A gastro-intestinal examination and follow-up is never sufficient for colon elimination; x-ray of the colon must be insisted upon as a separate procedure.

In gastric ulcer which, on x-ray examination, has the appearance of being benign, the patient should be placed in bed on a very strict peptic ulcer therapy régime. If, in ten days or two weeks, the clinical symptoms disappear, blood is absent from the stool, and x-ray shows a decreasing size of the ulcer, it is fair to assume that the lesion is benign. The medical and diatetic treatment should be under careful x-ray observation until the lesion is absent at least six months. If there is not a progressive recession or if the lesion progresses under exact medical régime, prompt operation is indicated. Gastric cancer may show an ulcer area larger but shallower than that of a benign ulcer. Gastric cancer affects males about twice as frequently as females. Of all the organs of the body, considering both males and females, world statistics would indicate the stomach to be the organ most affected by cancer.

We must remember that:

1. In so-called "benign" gastric ulcers, as distinguished from duodenal, cancer should be suspected.

2. Every ulcer on the greater curvature should be considered malignant, no matter how innocent may be its appearance.

3. The larger the ulcer, the more likely is it malignant, but any gastric ulcer, regardless of size, is to be suspected of malignancy.

4. A carcinomatous ulcer may apparently heal temporarily on strict medical régime and disappear from x-ray visualization.

5. Never disregard positive x-ray diagnoses of malignancy, even though some of them may be wrong. No matter how innocent the appearance on the operating table, the roentgenologist has an advantage over the surgeon in that he sees the normal, functioning stomach and can observe its peristalsis.

6. A negative x-ray report is never wholly to be trusted as absolutely ruling out malignancy. The increasing impression is that even with "apparently benign" reported on a large sized gastric ulcer on the greater curvature of the stomach, and to a lesser degree on the lesser curvature, clinical history if sufficiently long followed is apt to reveal the presence of carcinoma, and that such ulcers, if they do not rapidly and completely heal, should be considered malignant.

Carcinoma of the colon develops gradually. There may be occult blood, anemia, and gradually developing weakness for many months before medical advice is sought. Due to the difference in the anatomical relations, the pathological variety of growth, and the fluid state of the bowel content in the right colon as compared with the more solid content in the left colon, we may have a difference in symptoms. The tumors in the right colon are usually flat and do not encircle the bowel. The bowel is of larger caliber and more pliable, for which reason obstruction will seldom occur unless the cancer is located at the ileocecal area. We must always keep in mind the possibility of having a well advanced carcinoma of the right side of the colon without any evidence of constipation or obstruction. On the contrary, quite often a diarrhea occurs. In the left colon a scirrhous carcinoma of smaller size which encircles the bowel wall causes gradual obstruction of the bowel. Symptoms may be heaviness in the epigastrium, irregularity of defecation with a tendency to constipation, and, at times, alternating diarrhea. If a patient of middle age or older complains of a gradually developing constipation with or without intermittent diarrhea, when there has been no acute illness, change of diet or occupation, we should think of the possibility of a gradually developing carcinoma.

Often the striking feature of gastro-intestinal carcinoma is the advanced stage reached before the patient is aroused or before the case is diagnosed. Familiar examples are a gross lesion of the greater curvature of the stomach with widespread metastases, revealed probably in a gastro-intestinal x-ray for a routine or general examination; a gross lesion in the cecum palpable to the surgeon on examination and yet not having caused the patient any alarm; an apparently sudden obstructing picture of the bowels from a gross left colon growth in a patient who until then thought only of slight gastro-intestinal inconvenience; or a gross, markedly advanced recto-sigmoid malignancy in a patient with long-standing bleeding hemorrhoids and who is shocked to think there could be any other cause than the "piles" for increasing symptoms.

There is the experience, too, of operating for another diagnosis, probably an acute condition, and finding a gross malignancy somewhere in the gastro-intestinal tract which had seemingly given no symptoms to date. Increasingly, the public has been educated to, and the medical man is demanding, more careful consideration of other possibilities in the presence of a presumably simple diagnosis, as of cholecystitis with confirmatory x-ray findings. A thorough scrutiny of the gastro-intestinal tract will often reveal additional disease, such as a duodenal ulcer, and every once in a while an early malignancy of the stomach or bowel.

Of course the question of expense often arises: In the case of charity patients or of those well able to pay, there is no problem. But with the low income group, it will be asked if we are justified in demanding such complete examinations in patients of cancer age with indefinite symptoms. There are, however, many relatively inexpensive procedures available: rectal examination, sigmoidoscopic examination, careful histories bearing in mind the vagueness of early symptoms, and, of prime importance, more frequent stool examinations. Then, if any indications exist, insistence must be made on sufficient examination to prove the condition, and usually a way can be found.

Regarding treatment, chemical approach has, as yet, yielded nothing very definite. Freezing methods are now being experimented with. Electro-coagulation or heat cauterization have a place in treatment, especially in the rectum, and at times in the lower sigmoid. The knife, x-ray, and radium are still the instruments of choice. Of these methods, it is likely that there is most difference of opinion as to indications for x-ray treatment.

It is unfortunate that so common a lesion as gastro-intestinal carcinoma should generally be very resistive to radiation therapy. Carcinoma of the stomach is particularly resistive, and at most all that can be hoped for, even with intensive high voltage radiation, is slight palliation. Lymphosarcoma of the stomach is one malignancy which does respond well to radiation and, in rare instances, possibly a permanent arrest is attained. The adenocarcinomata of the small bowel respond as poorly to radiation as those of the stomach. The carcinomata of the colon, rectum, and anus show a decreasing resistance in this order, and vary greatly from the most resistive to the most sensitive types. Those of the cecum, ascending and transverse colons, and of the greater portion of the descending colon, as a group are as resistive to radiation as those of the stomach and small bowel. Postoperative radiation directed to their gland bearing areas also is futile, as these extended lesions are particularly resistive. The carcinomata of the lower portion of the colon, including the sigmoid, respond more favorably to radiation, but on the whole, it gives rather poor results. Postoperative radiation to the gland bearing area of this group, however, is indicated.

Descending further in the large bowel to the rectal carcinomata, we find a much greater response to radiation, and these lesions offer a good opportunity for the surgeon and radiologist to coöperate in the attainment of good results. If surgical removal of the rectal carcinoma is possible, it is the method of choice and should be followed by intense radiation to the operative site and the regional glands. In some of these rectal lesions, it may be advisable to insert radium into the lesion, and this to be supported by external roentgen radiation. The sensitivity of the rectal carcinomata in general warrant the use of intensive radiation. The anal carcinoma, which is usually the squamous cell type, is the gastro-intestinal lesion most sensitive to radiation, and is easily treated with it. Cure of this lesion with radiation is the rule, and this constitutes the one really bright spot in radiation therapy of gastro-intestinal carcinoma.

An effort has been made to restate the fact that gastro-intestinal involvement constitutes by far the largest group of carcinomata, and yet it is here that diagnosis of cancer is often longest delayed. In other regions, the public has been made more conscious of early manifestations. We, as doctors, must educate the public to the fact that if early gastro-intestinal diagnosis of cancer is to be made, the patients must come to their family consultants, not with typical textbook symptoms, but because of such vague complaints as epigastric heaviness or discomfort, "dyspepsia," lessening of appetite, any stool change or irregularity of bowel movement persisting for more than two weeks, and any unexplained weakness, tiredness, or loss in weight. Until now any unusual discharge has been stressed to the public as an early sign of cancer, and this is, generally speaking,

true, as in such instances as an unusual discharge from a sore on the face, from the nose, or from the nipple. Blood has been especially emphasized as an early sign, and this is true with cancer of the bladder and kidney, as it is also true with an irregular or unusual discharge from the female organs. Certainly blood from the stomach or rectum is to be kept before the public as a sign of cancer, but it is of utmost importance that the public be informed that, unlike the urogenital tract, blood from the gastro-intestinal tract as observed by the lay person is not usually an early sign of cancer, but often a late sign.

We must not be misled by the fact that patients with cancer of the gastro-intestinal tract will improve on a non-roughage diet and, with mineral oil added, feces will pass narrowing obstructive points. With any suggestive history, certain procedures become immediately necessary: digital rectal examination, careful abdominal palpation, and stool examinations. In early diagnosis of cancer today, the gastro-intestinal tract presents Problem Number One because of its high percentage among cancer conditions, because of its insidious early symptoms, and because, at times, of the treachery of its relatively long existence before giving gross manifestations.

RECURRENT MYXOSARCOMA OF THE RIGHT INGUINAL REGION

Report of Case

L. K. BUZZELLE, M.D., and R. B. TUDOR, M.D.
Minneapolis, Minnesota

MYXOSARCOMATA may occur in many locations. They are most frequent in the retro-peritoneal region, the muscular fasciæ of the thigh, the bladder, and the forearm. They may occur in almost any tissue of the body, where myxomatous tissue never is found normally in the adult. They have been described in the head, breast, spermatic cord, prostate, testicles, along the course of nerve bundles, and in the pleural cavity. The age incidence is six months to eighty-three years. Most of these tumors are in the age group from forty to sixty years.

The etiology of these tumors is controversial. They probably arise due to a metaplasia of connective tissue elements. A fundamental and permanent change in the growth characteristics of some type of connective tissue cell must be assumed. The type cell is the mucous connective tissue cell as found in the early embryo restricted almost exclusively to the umbilical cord. It is a fibroblast which secretes a homogeneous, semi-fluid, intercellular substance called mucin. In a myxosarcoma many of these cells are likely to be spindle shaped. The more definite the establishment of the tumor as a malignant neoplasm, the more cellular it tends to become. A surprisingly large percentage give a history of injury, often severe, at the site of the subsequent appearance of the tumor.

Myxosarcomata of the inguinal region or thigh occur most often in the soft parts but may be attached to the periosteum of the bone.

Myxosarcomata of the thigh usually begin as a small fibrous swelling which persists and after a period of months or years suddenly begins to grow rapidly. They usually develop insidiously. Unless the tumor invades the nerves, there are no symptoms. These tumors do not metastasize early.

On physical examination the tumor appears as a large round or oval swelling. It is tough but not hard to the touch. There are no areas of fluctuation. The outline is usually not regular but contains many projections some distance from the main tumor mass. The size may vary a great deal. A myxosarcoma weighing thirty-two kilograms has been reported.

Myxosarcomata usually form lobulated or polypoid masses which may or may not be sharply demarcated and encapsulated. On section they often appear translucent, gelatinous, or colorless, but are sometimes grayish, yellowish, or reddish in part. The myxomatous portions are seen at the growing edge of the tumors. The central portions tend to become more cellular. The myxosarcomata are usually sufficiently vascular to assure an adequate blood supply to all parts. Necrosis in these tumors is observed in the more cellular parts, never in the advancing edge.

Myxosarcoma is a highly malignant tumor responding only occasionally to recognized forms of therapy. The treatment of these tumors is surgical. As a group the myxosarcomata are resistant to radiation therapy. After surgical removal these tumors are prone to recur locally. Metastases to the abdomen, lungs, vertebræ, and kidneys are quite common late in the disease. Metastases are frequently much more cellular than the parent growth. The mucoid or gelatinous property may be entirely lost in the metastases. The majority of deaths occur during the first year after treatment has been instituted.

Case Report

A white boy, ten years of age, came to us on December 17, 1938, complaining of a swelling in the right inguinal region. There had been a small, hard mass in the right inguinal region since 1930. One of us (Dr. B.) saw the patient in 1936, when a mass a centimeter in diameter was palpated below the right inguinal ligament. Surgical removal was advised at that time but was refused. The tumor did not seem to be getting any larger until January, 1937, when it began to increase in size. There was no history of injury before this phenomenon occurred.

The patient complained of some difficulty in walking and riding his bicycle because of the large size of the tumor, but these were the only complaints referable to the tumor. There was no pain. He had had a troublesome enuresis since infancy but otherwise had no urinary complaints. His bowel movements were normal. He felt well. There was no weight loss.

The urine, on examination, was normal. His blood morphology was also normal.

Examination revealed a large tough mass 3 by 4 inches in the right inguinal region, extending into the thigh and scrotum. It was not tender. It was not adherent to the skin, which could be moved freely over the tumor. The testicle could be palpated in the scrotum discrete from the tumor mass. No areas of fluctuation were felt.

On December 19, 1938, with the patient under ether anesthesia, the mass was exposed by an incision over the inguinal ligament extending into the scrotum. The capsule of the tumor was intimately connected to the surrounding subcutaneous tissue and fascia. The main body of the mass was around the saphenous vein at the fossa ovalis. The testicle was not adherent to the tumor nor was the spermatic cord involved in the tumor. There was apparently no invasion of the deep fascia of the leg or of the inguinal canal.

The saphenous vein was ligated at the fossa ovalis, and the tumor was removed by blunt dissection from the surrounding tissue. The fascia of the thigh was sutured to the fascia of the external oblique muscle, a Penrose drain was inserted in the wound, and the skin was approximated with Michel clips.

The tumor measured 10 by 12 centimeters in diameter. Grossly the tumor was grayish, very fibrous, and a cut section was quite slimy. The mass was split up into many compartments by fibrous trabeculæ. Microscopic examination revealed a typical myxosarcoma.

Convalescence was uneventful and the patient was discharged on December 23, 1938.

In March, 1939, the patient was again seen, with a small two centimeter mass in the inguinal scar. On removal this growth exhibited essentially the same structure as the parent tumor.

The boy is still well and at present no metastases can be detected.

ADENOMYOMATA

WALTER G. BENJAMIN, M.D.
Pipestone, Minnesota

"An adenomyoma is a tumor, usually pelvic, found in, about or adjunct to the uterus, made up of connective tissue, smooth muscle and gland elements derived from uterine mucosa. The uterus, itself the commonest seat, is also undoubtedly the focus and source of dissemination of this growth, which is located within a limited radius at some point from the umbilicus down."—HOWARD KELLY.

ENDOMETRIOMATA are usually considered as belonging to the same class of tumors as adenomyomata—the essential characteristics of each being their content of epithelium resembling uterine or tubal mucosa which responds to the stimulus of menstruation and pregnancy. MacCarty states, "an adenomyoma is any tumor in which glands and muscle play a neoplastic part and may presumably occur wherever these tissues exist in close proximity." Endometriomata, however, presumably come from transplantation of endometrial cells by way of the fallopian tubes onto pelvic peritoneum and do not contain muscular elements as a rule. However, most writers use the terms adenomyomata and endometriomata interchangeably and we shall do so in this discussion.

*Read before the annual meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, June 1, 1939.

Theories of Origin

Sampson's theory is that commonly held today as best explaining the origin and pathogenesis of endometrioma. He has shown that wherever misplaced endometrial tissue is found, its histologic structure is identical with uterine mucosa

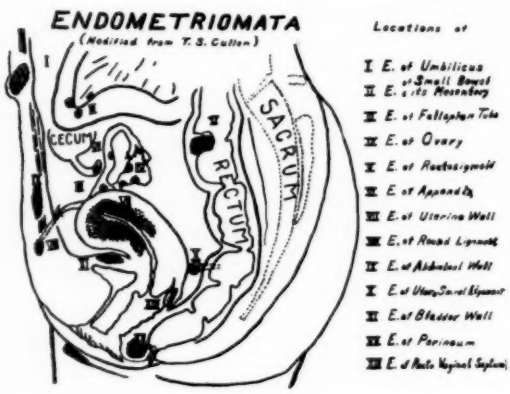

Fig. 1.

and it responds in like manner to physiological stimuli (i.e., ovarian hormones) in its reaction to menstruation, pregnancy and the menopause. According to this theory, blood and detached endometrial tissue from the uterus is regurgitated from the fallopian tubes into the pelvic cavity and results in endometrial transplants onto pelvic peritoneum—probably most often onto the ovary, primarily on account of its close anatomic relationship to the fimbriated end of the tube.

The ovary then often acts as the incubator for the endometrial cells. The so-called "chocolate cyst" develops, perforates and spills its contents, carrying endometrial particles to implant on other organs such as the abdominal wall, recto sigmoid, round and broad ligaments, etc.

Cullen in his excellent monograph in 1908 showed that many adenomyomas of the uterus had direct connection between the endometrial elements of the tumor and the endometrium of the uterine cavity.

Several other theories may be mentioned but they either are not accepted today or could conceivably account for only an occasional case. Von Recklinghausen in 1896 held that the epithelial element of adenomyomatous tumors arose from portions of the Wolffian body which had become detached during fetal life. Iwanoff suggested that endometriomata are formed by downgrowths of the peritoneum, which has undergone metaplasia and become converted from a flattened to a columnar epithelium resembling endometrium as a result of chronic inflammation. The Mullerian theory attributes some endometriomas to the inclusion of Mullerian rests, especially in the ovary.

Endometrial transplants, especially to the abdominal wall, may also come from operation on the uterus or tubes. Several such cases have been reported after hysterotomy of the pregnant uterus, ventral suspension, etc. Lemon and Mahle of the Mayo Clinic report nine such cases of adenomyomata of the abdominal wall following various types of pelvic operations (not including cesarian section).

Frequency, Varieties and Location of Adenomyomata

There are three main varieties of adenomyomata of the uterus corresponding very much to the usual classification of fibromyomata of the uterus.

1. *Diffuse Uterine Adenomyomata.*—These are a part of the uterine wall, not demarcated or encapsulated as are fibromyomata. The uterus may be two or three times the normal size but the normal outline of the uterus is retained, although it may be somewhat irregular. On section, homogeneous translucent areas resembling mucous membrane may be seen scattered through a thickened coarsely striated portion of the wall. These areas may be brownish in color due to extravasated menstrual blood.

2. *Subperitoneal and Intraligamentous Adenomyomata.*—These are peripheral growths, having their origin in the uterus and growing outward into the broad ligament or subperitoneally. They may become pedunculated, very large and cystic, being filled with chocolate colored fluid (blood extravasated from the menstrual-like function of the endometrial lining).

3. *Submucous Adenomyomata.*—These are diffuse growths which have grown inward, become polypoid and projected into the uterine cavity and often through the cervix into the vagina.

Ovarian Adenomyomata or Endometriomata

"Chocolate cysts" of the ovary are perforating endometrial ovarian cysts filled with chocolate

colored material due to old hemorrhage. These occur during the menstrual life of the patient. They are usually small, 2 to 4 cm. in diameter, but may be as large as 15 cm. in diameter. They are usually densely adherent to surrounding structures, the result of perforations, proliferation and extension of endometrial cells and also often due to a low grade inflammatory reaction.

In addition to these more or less primary sites of adenomyomata in the uterus itself and in the ovary, lesions may be found as secondary growths or implants in the following structures: tubes, round ligaments, broad ligaments, recto-sigmoid, utero-sacral ligaments, recto-vaginal septum, abdominal wall (mostly following operations), bladder wall, etc.

These tumors may be quite benign or may prove fatal by exerting pressure on important organs, or they may obstruct a ureter or bowel. They may also develop malignant changes.

ANATOMIC LOCATION OF LESIONS

Location	Number	Per cent of Patients*
Uterus	618	69.9
Cervix	22	2.5
Ovary (probably not complete)	120	13.6
Rectovaginal septum	27	3.0
Ligaments of uterus	22	2.5
Sigmoid, rectosigmoid or rectum	24	2.7
Pelvic peritoneum	44	5.0
Vaginal wall	17	1.9
Fallopian tube	27	3.0
Umbilicus	6	0.7
Ileum	2	0.2
Appendix	1	0.1
Bladder	2	0.2
Diffuse	108	12.2

*More than one organ affected. The total, therefore, does not add to 100 per cent. (Counseller, Mayo Clinic).

Gonzalez reports that endometriosis is twenty times less frequent in the fallopian tube than in the ovary. Sampson found endometriosis in 43 per cent of abdominal operations on women between the ages of thirty and fifty. Many showed such slight involvement that they produced no symptoms. Dougal states that for every 100 cases of uterine fibroids there are twenty-five cases of external endometriosis (i.e. endometriosis outside the uterus) and six cases of internal endometriosis (the endometrioma a part of the uterus). He also states that the ovaries are involved in 70 per cent of the cases and gives the following locations of the endometrial tumors in his series of 241 cases: ovaries—103 cases; recto-vaginal septum—62 cases; recto-vaginal septum and ovaries—71 cases. The five remaining cases showed other locations. Dougal estimates that 10 per cent of all laparotomies done by him during an eleven and a half year period had external endometriosis. In Seitz' series of sixty-five cases the endometrial tumors were in the following locations: ovary—23; uterus—19; tubes—8; Douglas pouch—4; rectum—4; parietal and visceral peritoneum—4; laparotomy wounds—4; urinary bladder—3.

Counseller of the Mayo Clinic gave a very comprehensive summary of 884 patients with endometriosis seen at the Clinic from 1923 to 1937. These cases include uterine adenomyomata within and without the uterus and are listed in the accompanying table.

Symptomatology and Diagnosis

Adenomyomata are very interesting tumors. They produce in the uterus "a periodical increased tension due to the swelling of the various islets of mucosa, causing an intense grinding pain and a feeling of distention and dysmenorrhea as the effused blood is added to previous accumulations." If the tumor is unilateral, outside the uterus, in the broad ligament or ovary, this type of pain is unilateral.

Diagnosis must usually be made at operation or by the pathologist although a careful history and clinical examination may arouse suspicion. A patient with extremely painful periods and a hard and diffusely enlarged globoid uterus may have an adenomyoma of the uterus. Any firm tumor in the inguinal canal which enlarges and becomes painful during the menstrual period is likely an adenomyoma of the round ligament. Lockyer states, " We must regard an adenomyoma as a hemorrhagic and painful structure which is found in bad company, its intimate associates being adnexal tumors and pelvic peritonitis, parametritis and infiltration into bowel, whilst it can claim caseating tubercle, carcinoma and sarcoma as casual acquaintances."

"Endometriosis is a disease of the age of ovarian activity, for its development and progress are dependent on the same ovarian hormone that causes normal menstrual changes in the uterine endometrium" (Crossen).

Keene and Kimbrough suggest that the correct interpretation of the clinical picture as a whole

would point often to a correct diagnosis. Such a symptom-complex would be about as follows:

1. Age between twenty-five and the menopause.
2. Sterility—relative or absolute.
3. Abnormal menstruation—usually menorrhagia.
4. Dysmenorrhea of acquired type.
5. Dyspareunia
6. Sacral backache
7. Intermenstrual lower abdominal pain with increased discomfort at the time of menstruation.
8. Pain in the rectum or bladder which bears a direct relationship to menstruation.

In endometriosis we often find fixation and induration in the pelvis without evident cause, without a history of infection and with no pus present. Often a retroverted irregularly enlarged uterus fixed in the cul-de-sac without evident cause harbors an endometrioma or is attached by external endometriomata to the peritoneum of the cul-de-sac.

Treatment

Authorities differ widely as to treatment: whether it should be conservative or radical. Practically all opinion is agreed on Sampson's theory, that the endometrium is the main and only important element of adenomyomas or endometriomas and that this responds as does the uterine endometrium to ovarian hormone stimulation. It would seem to follow definitely, therefore, that to destroy the tendency of endometriomas to "menstruate," become engorged, proliferate and adhere to other organs, that the ovarian function must be removed. There may be exceptions to this rule. Perhaps, too, some endometriomata continue to grow after bilateral oöphorectomy because aberrant ovarian tissue still secrets its ovarian hormone. Conservative surgical methods have been used to try to conserve the menstrual and reproductive functions in women in the younger age group, especially when the lesions are fairly easily accessible as in the adnexal regions with possibly some peritoneal transplants. Many adenomyomata, especially the external type, atrophy following ablation of ovarian function by oöphorectomy, or destruction of ovarian function by radium or roentgen rays. In Counsellers' series of 884 cases, 162 were treated by conservative procedure, 701 by radical procedures and twenty-one by radium and roentgen ray. In so-called internal or uterine adenomyomata, especially if the patient is near or past the menopause, hysterectomy is usually advisable as some of these lesions will become malignant.

Dougal states that true conservative treatment was possible in only 10 per cent of his series of 262 cases. He further states, "The average person's reaction to these figures will probably be one of surprise that so many radical operations were considered necessary, but it must be remembered that to be successful, conservative treatment should not only conserve function but also cure the disease. Many keen advocates of conservative surgery are likely to forget this in their anxiety to preserve the reproductive function."

Operative Findings and Pathology

Typical findings have been so well described by Novak that I quote as follows:

"The surgeon on opening the abdomen and exposing the pelvic organs finds a small adherent mass in one or both sides of the pelvis, usually attached to the posterior surface of the uterus quite low down. On loosening these adhesions to rotate the adnexa into the field of operation, there is a gush of chocolate colored or dark rusty-looking fluid, and this should at once make him think of endometriosis. On examining the ovary he will see a small cyst with a dark hemorrhagic lining, which has been opened in bringing up the adherent adnexa. The cyst may be only a centimeter or so in diameter, and is rarely larger than a hen's egg. The tube is usually quite normal, with patent fimbriated extremity, though it may be surrounded by peritoneal adhesions. On carefully inspecting, by good light, the depths of the pelvis, he will frequently see a number of rather puckered hemorrhagic areas of dark bluish color, in one or both uterosacral ligaments, and similar areas may be seen on the anterior surface of the sigmoid or rectum, or elsewhere in the pelvis.

"This, then, is a very typical picture, but it may present all sorts of degrees and variations. In not a few very mild cases the adnexa may at first sight seem quite normal, but on close inspection of the ovaries one may see a number of reddish-pink, fibrin-like areas representing tiny endometrial islands or 'implants.' Or one may see hemorrhagic areas, similar to those described, in the cul-de-sac or elsewhere, even when the ovaries seem entirely normal.

"At the other extreme are cases in which the pelvis may be filled with a 'frozen' mass, consisting of an adenomyomatous uterus, firmly adherent adnexa, and bilateral endometrial cysts, and extensive endometrial invasion of the rectal or sigmoidal wall. In fact, the bowel may be so enormously infiltrated as to simulate

malignancy, or to produce complete obstruction, while at times the invading endometrium may push far down in the rectovaginal septum."[8]

Endometriomata in the ovary or implants elsewhere show grossly as "blood tumors"—that is, they show cavitations which contain dark blood from old and continued menstrual-like extravasations. They are somewhat cystic and show surrounding inflammatory or infiltrative reaction, whether in the abdominal wall or ovary. The most typical of these is the so-called "chocolate cyst of the ovary." In the uterine wall translucent areas, brownish in color due to extravasated menstrual blood, are often present and are typical of adenomyomata of the uterus. The smaller peritoneal endometrial implants are rarely over 0.5 cm. in diameter and show up as bluish or brownish-red cysts, often with puckering of the tissues about them. Similar endometrial tumors in the navel, laparotomy scars, or the blue dome cysts of the posterior vaginal vault all show similar coloration and on rupture discharge old blood.

I have selected two cases illustrating some of the different types of adenomyoma and the reactions which lead to distinct problems in the management of this disease.

Case 1.—This patient, female, single, aged 33, was first seen in December, 1930, with a complaint of gradually increasing pain the past six months through the lower abdomen, especially in the right lower quadrant, pain being increased by jars and jolts, riding, stooping, etc. The pain radiated to the sacrum and the past four or five months she had had almost constant pain in the rectum, which was worse on defecation. She had urinary frequency and bearing down but no nocturia. All the above symptoms were much aggravated at the menstrual periods, which were regular and scanty and of about five days duration. She has had severe dysmenorrhea for several years, the pains beginning five to seven days before and continuing throughout the period.

Her general health has never been good. She had had recurring sinus infections, indefinite indigestion, migraine, and had always been underweight.

Examination.—General examination was essentially negative, except that there was a tenderness over the lower abdomen, especially in the right lower quadrant. Bimanual pelvic examination showed the uterus to be retroverted, irregular and apparently continuous with and fixed to a tender irregular mass in the right adnexa and cul-de-sac.

Diagnosis.—The preoperative diagnosis was probably fibromyoma of the uterus.

Operation.—At operation, December, 1930, a chronically inflamed appendix, bound down in adhesions medial to the cecum, was removed. The uterus was of normal size, retroverted and fixed to a cystic tumor 12 centimeters in diameter, which filled the right pelvis. The tumor originated from and had destroyed the right ovary and was fixed to the broad ligament and other structures. On freeing the tumor, it ruptured, spilling a chocolate colored slightly viscid fluid. The cyst wall was dissected free and removed and the bleeding from the raw surfaces controlled. A temporary type of suspension of the uterus was done to keep it from falling back into the cul-de-sac.

The patient remained free of pelvic symptoms and in fair general health until December, 1931, a year following operation, when she had severe knife-like pains across the lower abdomen, mostly in the right lower quadrant, eight or ten times each day of her menstrual period, with much bearing down. The pelvis was essentially normal.

In June, 1932, there was a recurrence of pelvic and referred pains much like she had had before her operation. Periods recurred about every two weeks, lasting about six days with an increased amount of flow, clots, and severe pain so that the patient had to spend three days of each period in bed. She developed increased lumbo-sacral backache and pressure on the rectum, which was made worse by walking, riding in the car, etc. She had fever and tachycardia for long periods.

Examination showed a tender indurated area five centimeters in diameter in the suprapubic portion of the old operative scar. Bimanual examination showed the fundus fixed in retroversion and irregular pea-sized nodules were present in the cul-de-sac, across the front of and adherent to the rectum but not fixed to or eroding into the rectal mucosa. This condition continued to progress slowly with the nodules in the cul-de-sac becoming gradually larger and more confluent. The suprapubic mass became more tender at each menstrual period and finally became bluish in color and discharged a dark bloody material through a suprapubic sinus most of the time but in increased amounts at menstrual periods. A biopsy of a specimen of the suprapubic mass, October, 1933, was diagnosed as (1) endometrioma and (2) low grade subacute infection by Dr. E. T. Bell.

At operation, June, 1934, we resected the section of the suprapubic abdominal wall involved in the adenomyomatous lesion (3 x 4 x 2 cm.)

There was no evidence of ovarian tissue in the right pelvis. Confluent pinkish nodules involved the cul-de-sac and extended across the rectum and posterior aspects of the broad ligaments. The left ovary was irregularly enlarged to three times its normal size, showed purplish areas and was fused with the left tube and broad ligament. The fundus showed small subserous nodules. We removed the left ovary and the outer two-thirds of the left tube, together with the involved posterior aspect of the left broad ligament. Dr. E. T. Bell made a diagnosis of endometrioma of the abdominal wall tumor and left ovary. The wound was closed without drainage and radium needles were placed in the abdominal wall at the site of the tumor.

Her convalescence was uneventful and we were able to follow the gradual subsidence and finally the disappearance of the nodules and the induration in the pelvis. There has been no recurrence of the abdominal wall or pelvic tumors. The patient had mild menopausal symptoms for two to three years and no menstrual flow following the last operation. Her general health has continued good except for migraine.

Case 2.—This patient, female, married, aged 63, was first seen March 21, 1931.

Past History—In 1906 the left tube had been removed for tubal pregnancy. This was followed by a postoperative rupture which was repaired in 1910 and this was followed by a second postoperative rupture which was repaired in 1925 at the University Hospital. Menopause had occurred at forty-eight.

Present Illness.—She had profuse vaginal bleeding in September, 1930, and passed several tissue-like masses. She had spotting from then until January, 1931, and had a second moderately severe hemorrhage March 8, 1931, and passed a "tissue mass the size of a kidney" (description as given by patient suggested a pedunculated submucous adenomyoma or fibromyoma) and slight bleeding continued and became profuse March 20, 1931, requiring packing. Examination of the pelvis showed a patulous elongated cervix with a stump of tissue projecting through the os suggestive of the pedicle of a submucous fibroid. The fundus was the size of a small to medium grapefruit.

Thorough curettage was done and Dr. E. T. Bell reported the tissue to be a submucous adenomyoma. Heavy radium dosage was given following dilatation and curettage on four different occasions, from March, 1931, to February, 1932, but with only temporary help. The tissue removed on curettements was pale pink and soft, with some gelatinous areas. The specimen submitted to Dr. Bell, February, 1932, was diagnosed as myosarcoma.

It was realized she would be a very poor surgical risk on account of her age, weight (260 pounds), hypertension (260/138), but since the tumor did not respond well to further radium, operation was done, June 9, 1932, under combined spinal and general anesthesia. The uterus was one and one-half times the normal size and its peritoneal surface was irregular and indurated. There was considerable thickening and induration in each broad ligament adjacent to the uterus. No definite glandular metastasis were found outside of the pelvis. The tubes and ovaries were atrophic. A total hysterectomy was performed and the patient had an uneventful recovery.

A recurrent mass was treated by radium needles, October 3, 1932, but the patient died later, elsewhere.

References

1. Counseller, Virgil S.: Endometriosis. A clinical and surgical review. Collected Papers of Mayo Clinic, 1938, p. 357.
2. Crile, George, Jr.: Endometriosis: A clinical study of thirty-seven cases. Cleveland Clinic Quart., 4:303, (Oct.) 1937.
3. Crossen, H. S.: Clinical features of pelvic endometriosis. Jour. Arkansas Med. Soc., 29:145, (Dec.) 1932.
4. Davis, C. H.: Endometriosis. Curtis' Gynecology and Obstetrics, Hagerstown, Md. C. F. Prior Co., II-16:I, 1938.
5. Dougal, Daniel: The problem of endometriosis. Am. Jour. Obst. and Gyn., 35:373, (March) 1938.
6. Goodall, James R.: Endometriosis. Curtis' Gynecology and Obstetrics, Hagerstown, Md. C. F. Prior Co., II-14:15, 1938.
7. Hosoi, Kiyoshi: Endometriosis. Internat. Sur. Digest, 13:323-343, (June) 1932.
8. Novak, Emil: Pelvic endometriosis and its treatment. Am. Jour. Surg., 33:422, (Sept.) 1936.
9. Pemberton, Frank A.: Endometrioma of the female genital organs. New England Jour. Med., 217:I, (July 1) 1937.
10. Randall, K. C.: Interauterine and extrauterine adenomyoma. Proc. Staff Meet. Mayo Clinic, 11:9, (Jan. 21) 1936.
11. Seitz, L.: The origin, clinic and therapy of endometriosis (heterotopies of the uterine mucous membrane). Arch. f. Gynaek., 149:529-607, 1932.
12. Seitz, L.: Clinic on endometriosis. Zentralbl. f. Gynaek., 57:1, (Jan. 7) 1933.

GREETINGS FROM THE ALUMNI*

O. J. HAGEN, A.M., M.D., F.A.C.S.

Moorhead, Minnesota

MR. Toastmaster, President Ford, Members of the Board of Regents, distinguished guests and ambassadors from afar, members of the faculty of medicine, alumni, and friends of the University and the Medical School:

So many impressive commemorative addresses and valuable contributions from distinguished members of the medical profession and representatives of the allied sciences have been given during these two days that towards the celebration's close no one can quite hope to measure up to the task assigned, and that is the thing that painfully distresses me personally at this otherwise enamoring hour. Surgeon General Parran's statesmanlike and masterly presentation at yesterday's Convocation, Dean Diehl's, President Ford's, Governor Stassen's and Dr. Carlson's addresses of last night were masterpieces worthy of remembrance. They should be sealed in caskets of gold to be opened and the contributions read at the 100th anniversary. None of you, not even I, will be present to hear and enjoy them—but they will testify eloquently to the fact that there were Giants in the Earth in our day who were in the

*Banquet address on the occasion of the 50th Anniversary of the Founding of the University of Minnesota Medical School, October 13, 1939.

trenches of our social order battling for a better day. I was present, as was Dr. Ford, at the Harvard tercentenary, and we came to realize how much the voices out of the past mean on such an occasion. Caskets sealed 100 years were opened and we listened breathlessly as they read what they contained.

On an occasion like this when I am not speaking for myself alone but representing upon this program a lordly group—the alumni of the medical school—numbered among whom are some of the world's great surgeons and medical men, what disconcerts me is that I feel inadequate to the task, and that I may unwittingly say the wrong thing as a little old lady friend of mine in Moorhead once did. Her neighbor lady had lost her husband. He had taken the vulgar way out by hanging himself in the attic. In such a situation it is trying to know just what to say in consolation and the little old lady worried about it. But she decided to go and when her daughter returned she found her mother dressed up and ready. Said her daughter, "Now you know, Mother, you talk too much anyway and you get yourself into trouble." She resented the allegation and retorted, "I guess I know what I am doing. It has stopped raining and I can talk about the weather, can't I, and that has certainly nothing to do with her husband hanging himself in the attic." With that retort she started over across the back lot. Fortunately, she found her friend standing on the back stoop. She said, "Good morning, Mrs. Jackson, fine day out." The bereaved friend replied, "I should say not—look at my washing hanging out there on the line—the clothes are not dry yet." "Well, Mrs. Jackson, I shouldn't think you would have such a hard time getting your clothes dry—you have such a big attic to hang things in."

But I certainly cannot be saying "the wrong thing" when I venture the assertion that never before has the campus of the University entertained so many distinguished medical men, so many chemists, physiologists, biologists at one and the same time. These latter—allies of the profession—have furnished the modern reconstructed temple of medicine not only the foundation stones upon which it is rebuilt but the chemist and the physicist among them have provided it with the armamentaria by which it is able to carry on its impressive warfare against disease. Thank God that in the republic of science and medicine there are no tariff barriers, no embargoes, no "black-outs." In the warfare against disease, the chemist has given the profession the anesthetics, the antiseptics, the vitamins, radium, the serums, the vaccines, the salvarsans and the sulfanilamides. The physicists have given us the x-ray, the spectroscope, the ultra-microscope. Together they have by their speculative minds penetrated the universe of the atom and revealed much of its mystery. Subtract their important contributions and scientific medicine will still be in its infancy. So we are happy and grateful that distinguished representatives of all these allies were invited to this celebration and have honored us by their presence and their inspiration.

So we are glad for anniversaries because they are timekeepers of progress. To those who are directly connected with such an event, they become occasions for appraisal of what the years have meant in terms of achievement, occasions for refreshing the minds regarding the historical background of the venture, for recalling the names of those that gave it impetus and carried on in faith and sacrifice. They are occasions too for renewing friendships among those connected in one way or another with it, and, surely occasions for reminding one another of the obligations in relationship to it. Then, too, it would be an unworthy discipleship that would not on such an occasion pause to envision the future and fail to re-dedicate themselves to the venture's continued nurture and development. Institutions worth the survival grow in proportion as they are buttressed by the spirit that founded them and by the faith and genius of those that come after.

Medicine is an ancient Guild. To its honor let it be recorded on this 50th anniversary that it has built the one great republic that has come out of a dark distant past to withstand all storms and to grow into an efficient human agency dedicated to the high service of man's welfare.

Tonight I come to you representing the 3,600 and more alumni of the University of Minnesota Medical School—the living and the dead. I am here to bring to this distinguished assemblage, their greetings and their cheers. We, as alumni, salute tonight the institution's distinguished past. We entertain the fond hope that in the second half century its achievements may be even greater, and that there may be vouchsafed for it a

continued wise leadership, buttressed by the highest scholarship and the most dynamic teaching power medical science and practice afford.

Minnesota is a proud state—for more reasons than one. I could enlarge upon this subject but it would consume several days. But one of its chiefest glories lies in the medical men it has produced. But yesterday we committed the mortality of two of them to the good earth and the immortality of their spirits to the memory of a grieving world. They were Minnesoa-born and their names were lovingly known as Dr. Will and Dr. Charlie. So great were those Minnesotans, that eight years ago they were denominated among the seven greatest personages in their generation —the world over. Into this amazing half century they moved in, hand in hand, to write the most thrilling chapter in all the history of medicine. To their door the world made a beaten path though they lived in a forest. By their high performance they perfused medical practice with such incandescence in this state and the world as to light a pathway across it that will illumine it for centuries to come. They left lights flashing when and where they fell, and the alumni of Minnesota bow tonight in reverence and gratitude not only for the inspiration they gave but also for the monumental legacy they left their native state in the Mayo Medical Research Foundation they created that the profession might acquire a greater competence in the endless battle against disease. That is why I said that Minnesota is a proud state.

We would be recreant to a duty we owe did we fail as alumni upon this occasion to pay tribute to the then President of the University, Cyrus Northrop, whose memory is to me a perpetual inspiration, and to the great Board of Regents of those early days, who made the medical department a tangible and intangible part of the University of Minnesota. It was their vision, their faith, and their courage that created the medical school. They built more greatly than they knew, as most pioneers often do for their generation. We name tonight in reverence its successive deans: Millard, Ritchie, Westbrook, Lyon, Scammon—all but one now gone to his reward; not only to them this adulation but also gratitude to those early medical faculties that gave to the institution so much of faithful and impressive service. Grateful too are we to you, Dean Diehl, to whom but a few years ago was tossed the flaming torch; yours is the responsibility and privilege of carrying on—to the end that from out of these medical halls may continue to go out highly trained human products worthy of a great profession. Somehow, we alumni feel just a little chestier when our Alma Mater receives trophies at its altars from the world's battle fields of endeavor of those who once were here. We note with pride your auspicious beginning and we look forward in the hope that the noonday of your reign "may keep the promise of its morn."

With you, President Ford, rests the heavy responsibility of breathing the breath of life into this great academic and professional aggregation of colleges—the job of coördinating the various departments that all may flower into deepest hues according to their kind. This university whose head you are is the sanctuary of the inner life of this great commonwealth. I know you will guard its sacred prerogative of academic freedom as is guarded the tomb of the Unknown Soldier in Arlington. Let no sinister hands ever pull it down from the high place it occupies in the intellectual firmament of the world.

A medical school linked intimately with a great university is twice blessed, as Dr. Parran emphasized in his convocation address yesterday, and we alumni appreciate the Unitas Fratrum. The advantages of this most natural union are manifold and reciprocal. It is a spendthrift state that educates but one part of a man and sends him out into its social order with but cunning-niggard of the human excellencies that makes him a great and understanding citizen as well, and, unresponsive to the things that life holds of beauty and of other worth. The presence of men eminent in all the various departments of knowledge imparts dignity, worth and stability to the whole institution. All the professors in such an intellectual empire are under a compulsion which tends constantly to keep them at a higher level. Their products come to bear the impacts of a greater universality of interests and character. The spirit of emulation with other faculties of high scholarship improves the standard of work and makes for a better product. The center for continuation study—the brain child of the late lamented President Coffman—is one of the finest projects in modern education. Its work is being watched throughout the world. The medical continuation project is most ably directed by Dr.

Wm. O'Brien. He knows what the profession needs most, and through this agency he is giving a matchless service to it. I saw him resurrect a man sixty years old who died professionally thirty years ago.

President Ford, we of the alumni have faith in your intellectual and administrative leadership. We know you are steeped in the university tradition. Great historian that you are, you are capable of mentally encompassing not only the past but also capable of envisioning the fateful future of a world beset with trouble. As an alumnus and as a citizen of this state, I took occasion but a year ago to express gratification over your election to succeed America's greatest educational statesman, Dr. Coffman, to the presidency of the university and to congratulate the commonwealth on so wise a choice. In that same message I wrote: "It has been the greater part of your distinguished life-work here to help build and fashion the institution into the great intangible thing it has become, now ranked among the foremost universities in the nation. You have in your twenty-five years of association with it watched it grow in attendance from 5,000 to 15,000 students —the second largest state university in America. You have seen the campus extended and the buildings multiply. You have observed its faculty increase from a few hundred to nearly 1,500, numbered among which are some of the world's great scholars. You have seen not only departments added but also deepened until one can in truth say of the university tonight that there is no appreciable province in the dominion of the mind to which it is alien."

Lying deep in this intellectual firmament and gleaming like a flaming Orion, shines the medical school—now celebrating the 50th anniversary of its emergence into the galaxy of departments. You will, I know, guard its interests that it may grow into a stature exceeded by no other medical school in the world. I know I am expressing tonight the sincere sentiments of the medical alumni who once were inhabitants on this star, when I pledge you our continued loyalty, coöperation and interest.

To reminisce, I must confess that compared with the modern graduate in medicine, those of us who went from out of the department in what has come to be termed the "horse and buggy" days did not know much. But let me tonight say that those boys were the matchless spirits who in their day did such kindly and faithful service under the most trying circumstances as to gain for the profession the well earned title, "The friend of man." Many of them lie tonight in the little cemeteries by the trails they travelled through blinding winter storms, no lights to guide them—only the inner light and the irrepressible spirit that drove the country doctor to do his job—when no other human being dared the night. Their meager medical training and their little medical kits may have seemed but small bastions against the adverse catastrophes they faced in those early days, but history will record to their everlasting honor that nowhere in life's trying situations have they been quite so large. They were an earnest and an answered prayer—and a fortress to countless homes and distant hamlets on frontier settlements where most of the boys went to administer.

"From the voiceless lips of those unreplying dead," I tonight bring greetings and words of gratitude to the medical school which was to them the source of the inspiration and the medical training that gave the faith and the competence they had to carry on. These heroes had little of the comforts in which the modern graduates wallow. They had no high-powered, palatial, enclosed, warm automobiles—only open buggies and sleighs—the sleet, the rains, and the pitless blinding snows driving in upon them as they drove over trackless prairies. They had little practical laboratory knowledge, no hospitals near, no x-ray machines as we now enjoy. The days' and nights' experiences of those days, marooned and alone, haunt me like a nightmare to this day.

These early graduates were plain men, quite imperfect in training and equipment, but they answered the calls on wide fronts to face every form of disease and emergency—and because of the storms, often at the peril of their lives. They were plentifully bewildered, plentifully mired in medical ignorance as we know medicine today, but they did their job, their job went on in outer peace. They closed an epoch in the progress of medicine, not so impressive as now, but they need not be ashamed of the colors that they flew. They sleep tonight among our sacred dead. They upheld the best traditions of an honorable Guild.

Among those noble dead who lived those early days with high emprise, I am impelled to make special mention of one because of what he was and of what he wrought for his generation. I

have reference to Dr. Herman Johnson, member of the class of 1901, who died five years ago at Dawson, Minnesota—the scene of his earthly labors. I have not the time to etch him as I would like—only time to give you glimpses of this lordly man—beloved by every member of the medical profession of Minnesota and the entire Northwest, admired and respected by everyone who knew him. If the hierarchy of medicine ever elevated a man to sainthood, something which a few really deserve, the profession would by acclamation vote him the citation. Personally I would crave the honor of casting the first white ballot. His physique, his features, his leonine mane, his eyes when in conflict, his heart tender as a woman's when unperturbed, his loyalty to friend, his uncanny power of analyzing complex situations, his withering oratory when on fire, his hatred of sham and hypocrisy—these characteristics stand out in the memory of him.

He was a pioneer physician but his life-span bridged two epochs. He embodied in spirit and in practice all the virtues of humanity, charity, honesty, personal integrity, humility. He was a physician and a surgeon steeped in fidelity to the tenets of his Guild. He was fearless, capable, dynamic. In the early days out there on the western front, he drove out into the dark nights to minister, often to operate emergencies on kitchen tables with only candles and kerosene lamps to light him. His percentage of recoveries measured quite well up to that of the surgeon surrounded by all the accessories of the modern operating room.

He was to his community a wise counselor, to the sick "a pillar of fire by night," and by day, "the shadow of a great rock in a weary land."

His faith in individual medicine was to him an obsession to the last. Great student of human nature that he was, he realized that the regimentation of the noble Guild would eventually rob the individual member of his initiative, blast the soul out of the profession, tend to degrade it to a vulgar trade union, make the doctor a hireling of the state and dominated by the mediocrity of a political pressure group. In his heart he prayed that the high profession of medicine would be saved from such degredation. And I know that I am voicing the sentiments of the alumni when I say "Amen" to his prayer. You will pardon the digression when I say that some day it may come to pass that you all may lose even your most cherished liberties that patriots through the centuries fought and died for. When there are enough alien-minded mongrels among us who cease to appreciate free speech, the free ballot, a free press, free enterprise and freedom to worship as the individual conscience dictates, we will soon lose the freedom that we have known and our fate will fall into the hands of merciless dictatorships with their bureaucratic rule. Then preachers will be told what to preach; teachers will be told what to teach; women praying to their God for themselves and their children will be destroyed—for the dictator will have no other God before him.

So devotedly and endlessly did this man fight for his profession against politics, charlatanism and quackery that the struggle so undermined his health that he died earlier than his time, a martyr to the cause of scientific medicine here and everywhere. He led the fight in the legislature of Minnesota to place upon the statute books the so-called Basic Science law—which has since become a model for a score of other states in the Union.

In closing, I wish to address him tonight "where beyond these voices there is peace" in the lines of Wordsworth:

Herman:

"Thou hast left behind
Powers that will work for thee.
There's not a breathing of the common wind
That will forget thee;
Thou hast great allies;
Thy friends are exultations,
Agonies
And love, and man's unconquerable mind."

VERTIGO*

W. T. WENNER, M.D.

St. Cloud, Minnesota

VERTIGO is a subjective sensation of disturbed equilibrium often accompanied by a slight clouding of consciousness. It may be manifested in the form of (1) giddiness, which is a mild degree of fainting with a momentary loss of one's balance; (2) a sense of rotation, either with objects rotating about an individual or an individual rotating about objects; and (3) a feeling of pulsion manifested as a veering of the individual to one side or the other. All of the above sensations appear in the form of attacks. They are not continuous or constant.

It is well to remember that patients frequently do not distinguish true vertigo from nausea and fainting, because vertigo may be associated with both.

Equilibrium in the human body is maintained by: (1) afferent impulses to the brain; (2) efferent impulses through the motor tracts and to the muscles; or (3) coördinating centers in various parts of the brain.

Afferent impulses come from: (1) superficial and deep sensibilities located in the skin, muscle tendons and joints; (2) visual impressions; and (3) the vestibular portion of the internal ear.

It is the vestibular portion of the internal ear or labyrinth that is the most important factor in maintaining equilibrium. All factors are not imperative to maintain equilibrium, but at least two are necessary for the purpose. When one factor is interfered with, the others compensate and carry on the function. For example, a blind man can maintain balance with aid of his labyrinth, muscle and joint sense; a tabetic will maintain his equilibrium through his vestibule and visual function; and a deaf mute, having no vestibular function, maintains his equilibrium with his remaining functions. Sudden loss of labyrinthine function by disease will cause very unpleasant vertigo for a while, but compensation takes place and the individual adjusts to it.

Any deviation caused by irritation or destruction of any of the normal factors concerned in maintaining equilibrium results in vertigo.

Etiologic Factors of Vertigo

First are those caused by general systemic conditions such as cardiac, renal, or arteriosclerotic pathology, pernicious anemia, leukemia, operating through disturbances of the labyrinthine circulation. Drugs like quinine, salicylates, alcohol and tobacco may be responsible. Infection due to teeth, tonsils or sinuses may be the offending agent. Gastro-intestinal disorders of which the gallbladder has the highest incidence may cause vertigo. Trousseau[5] reports a series of cases of vertigo which he terms "gastrogenic vertigo," the earmarks of which are a direct relation to digestion proper and therapeutic response to dietetic and medical treatment. Analyzing his case reports, one is left with the opinion that many of his patients are the sufferers from gallbladder disease, which gives emphasis to this as a cause of vertigo.

In addition to the first group of causative agents such as general systemic factors are ocular conditions, diseases of the ear, and finally, diseases of the brain.

The following brief case report illustrates the gallbladder as a cause of vertigo:

A. H., male, aged thirty-six, a grocer, complained of low-grade temperature of three months' duration, gastric distress, frontal headaches extending to the occiput, attacks of vertigo associated at times with vomiting, weakness, and incapacitation for work. He was referred for refraction and checkup on sinuses.

The fundi showed tortuosity of vessels in both eyes. Error in refraction was negligible. The peripheral fields were normal. There was no nasal congestion and the sinuses were clear. Ears were normal. In the vestibular caloric tests the reaction time was well within normal limits: 40 seconds in the right and 45 seconds in the left. With these normal findings it was felt that ears, sinuses and eyes were not a factor, that there was no pathology in the cerebro-pontile angles, and that there was some general cause for the vertigo. The patient had a cholecystectomy done several weeks later with complete relief of all symptoms.

Ocular conditions causing vertigo are chiefly due to muscular imbalance, which increases when the gaze is in the direction of the paretic muscle. Occluding one eye will always relieve the vertigo. Poorly adjusted glasses, especially if the correc-

*Read at the Northern Minnesota Medical Association, Detroit Lakes, September 8, 1939.

tion contains a high cylinder or if the cylinder is at an improper axis, may result in vertigo. A person wearing bifocals for the first time may have a temporary vertigo until adjustment is made.

Aural Conditions Causing Vertigo

Pathologic conditions of the external auditory canal, such as foreign bodies or external otitis, may result in vertigo by increasing pressure or irritation of the ear drum. Middle ear catarrhal otitis media and blocking of the eustachian tube may also be a cause. Suppuration of the middle ear, acute or chronic, may cause vertigo by infection of the labyrinth. A sudden onset of vertigo, with nausea, vomiting and nystagmus, accompanied by a unilateral deafness without the presence of suppuration, has been described by Meniere as due to a hemorrhage into the labyrinth.

Brain Conditions Causing Vertigo

Intracranial lesions, such as tumors of the frontoparietal lobes, as well as those of the cerebellum, may cause vertigo. Weisenberg in his study concluded that vertigo in cases of brain tumor is caused by an increase in intracranial pressure, and that tumors of the posterior fossa are more likely to cause vertigo. He found no characteristic type of vertigo in any type of tumor and also found that tumors may exist without vertigo.

Trauma to the head may be followed by vertigo for an indefinite period due to cerebral concussion. This is important in industrial and civil cases. Vestibular tests may give some information as to malingering in such cases.

In certain brain conditions, such as multiple sclerosis and encephalitis, vertigo is a symptom in certain stages of the disease.

Diagnosis of the Etiology of Vertigo

Diagnosis of the cause of vertigo should be made only after a careful history and a complete physical examination to rule out any of the aforementioned systemic conditions, neurologic or cerebral diseases, and also aural pathology. An important measure in the diagnosis is the performance of the vestibular tests. This is a relatively simple procedure and can be performed by anyone. Even the interpretations are not difficult. The information received, whether negative or positive, is an invaluable aid. The rotation test requires a special chair, but the caloric test requires only water, so it will be described in detail.

The importance of the caloric test is seen in the following case:

Mr. W., aged thirty-three, first presented himself in 1929 with the history of impaired hearing of the left ear of several months' duration. The Weber test was referred to the left ear. Bone conduction of the left ear was increased as compared with air conduction. He was not seen again until 1936, when he was referred for fundus examination. He then gave the history that for six months he had had attacks of vertigo and stumbled over objects. He had an old comitant convergence of the right eye. Visual tests demonstrated 20/50 vision on the right and and 20/25 vision on the left side. Fundus examination showed a slight blurring of the upper and nasal disc margin of the left eye. He was referred to a competent neurologist, who found nystagmus to left, slight slurring speech, slight ataxia of left arm and leg, increased knee jerks grade +1 on left, and some impairment of deep pain sense both ankles. On these findings a diagnosis of multiple sclerosis was made and intravenous typhoid therapy instituted. He was seen by another neurologist several months later, at which time there was some improvement in his speech. His ataxia and loss of balance showed no change. Neurological findings were the same.

The patient was not seen again until February, 1937, at which time there was edema of the left disc and definite blurring of the right disc. Hearing of the left ear had markedly diminished. He was seen next in October, 1937, suffering from intense headaches. Examination then revealed total deafness of the left ear, left labyrinth functionless, marked reduction in vision, and bilateral choked discs. The spinal fluid was under markedly increased pressure. Operation demonstrated an acoustic neuroma of the left eighth nerve. The patient died twenty-four hours after operation.

Reviewing this unfortunate history, one is impressed with certain features. In the first place there was a long duration of symptoms, a period of nearly nine years. Undoubtedly the first symptom, impaired hearing, heralded the beginning of the acoustic neuroma. Further, failure to perform vestibular tests was responsible for the lack of information which would have made an earlier, correct diagnosis possible.

Two Methods of Caloric Test

1. *Koprak or Minimal Method.*—Use a 10 c.c. syringe and water at 55° F. Inject against the upper posterior part of the drum. Nystagmus appears in 15 to 25 seconds and lasts 60 to 100 seconds. The labyrinth is hyperactive when nys-

tagmus appears in 15 seconds or continues longer than 100 seconds.

2. *Mass douching* is probably more time consuming, but it is more satisfactory to study the vertigo and past-pointing. The technic is as follows:

1. Douche the right ear with water at 68° F. and head 30° forward.	1. Requires about 40 seconds of douching. Nystagmus will be to the left. Past-pointing will be about 8 inches to right with each hand. Sensation of turning to the left—tendency to fall to the right.
2. After nystagmus and past-pointing have been quickly noted, bend head back 60° and note reactions.	2. Same as above except nystagmus is horizontal.
3. Repeat 1 and 2 in left ear.	3. Same as in 1 and 2 but in opposite directions.

The caloric method tests each ear separately, as well as the vertical and horizontal canals separately. With the head forward 30°, the vertical canals, and with the head backward 60°, the horizontal canals are tested. Sometimes during the course of these tests, varying with each patient, there is a certain amount of pallor, nausea and perspiration, which is a normal reaction of the sympathetic nervous system.

If all of the responses are present, either normally or more or less proportionately exaggerated or diminished, it means that both inner ears are intact, that there probably is not present any lesion in either of the cerebello-pontile angles, and that if any vertigo exists it is probably due to some general cause.[4]

Treatment of Vertigo

The literature on treatment of vertigo is both voluminous and varied, signifying that there is nothing specific for the malady. The treatment, of course, is directed toward the cause and its elimination when possible.

Brain tumors are neuro-surgical problems. Aural conditions, especially suppurative, are in most instances relieved by radical mastoidectomy. An aural condition frequently causing vertigo is a catarrh of the eustachian tube, the result of an acute head cold, nasal obstruction, sinus infection, improper blowing of the nose, or exposure to a draught. Therefore, the first step in treating this condition is to procure the patency of the eustachian tubes, and the next step is to maintain it.

Atkinson,[1] in his study, states that "a large proportion of all cases of vertigo are due simply and solely to a unilateral eustachian obstruction, the cure of which will cure the dizziness. Eustachian catheterization is the sheet anchor, and not until it has been tried and failed or been proven not to be the cause of the symptom, should it be abandoned. As long as it improved, even if only temporarily, it should be continued."

Patients have been relieved of vertigo by removal of abscessed teeth or infected tonsils or cleaning up of a sinus infection. Gastro-intestinal disturbances and dietetic irregularities should be corrected. Circulatory conditions must be given proper attention. In a large number of cases, the cause is obscure and the attention should be directed to treatment of the attack, first principle of which is immobility, as the patient soon learns that the slightest movement provokes or aggravates vertigo. A quiet dark room more conducive to rest should be used. It is well to promote elimination by giving a mild cathartic. Sedatives should be given. The patient is usually vomiting, so sedatives are not tolerated orally. Three grains of sodium luminal subcutaneously or sodium amytal rectally are usually effective.

The treatment of Meniere's disease is directed not to the cause, as that is unknown, but to removing or reducing the liability to the attacks. Fatigue, worry, insomnia are factors aggravating or precipitating an attack of vertigo. The psychological aspect of the case, therefore, is important. These patients are usually of anxious temperament and need continued encouragement and regulation of their mode of living, such as adequate relaxation and avoidance of alcohol and tobacco.

The medical treatment recommended by Furstenberg[3] and his co-workers opens a new approach to this problem, and should be instituted in all cases when one fails to discover and eliminate probable causes. It is based on the theory that the vertigo is due to a water-logged condition of the static labyrinth. The edema is not water alone, but a solution of electrolytes, chiefly sodium salts and water.

The therapeutic indications are: (1) to permit as small an intake of sodium as possible; and (2) to prevent the accumulation of sodium by the body. The first is easily attained by means of diet, and the second by the administration of acid producing salts, such as ammonium chloride. When these two factors have been controlled, the intake of water does not need to be considered, although excessive quantities of liquids should be avoided.

In the series reported by these authors, the following treatment was followed:

1. Proteins were unrestricted.
2. Calories were permitted as indicated.
3. A low salt diet was advised.
4. Ammonium chloride was given at the rate of 3.0 Gms. with each meal (6 capsules, each containing 7½ grains, are taken during the meal) for three days and omitted for two days. The capsules should not be replaced by the chocolate-coated or the enteric-coated pills, because they sometimes pass through the gastro-intestinal tract without being absorbed. The ammonium chloride can be given in this dosage for an indefinite time without injurious effects.

In not one instance did the writers fail to produce an attack by the administration of sodium, and not once were they disappointed in obtaining complete relief by the medical therapy above described.

When all attempts with medical therapy have failed, surgical procedure may be necessary to give some of these unfortunate people relief. Dandy[2] recommends surgical severance of the vestibular portion of the eighth nerve. Other surgical procedures recommended are destruction of the labyrinth with absolute alcohol.

Summary

1. Vertigo is defined.
2. Importance of vestibular testing is stressed.
3. Two cases are reported.
4. Furstenberg method of medical treatment is advocated.

References

1. Atkinson, E. Miles: Aural vertigo. New York State Jour. Med., 37:555, (March 15) 1937.
2. Dandy, Walter E.: Meniere's disease: Its diagnosis and treatment. Jour. Indiana State Med. Assn., 32:117, (March) 1939.
3. Furstenberg, A. C., Lashmet, F. H., and Lathrop, Frank: Meniere's symptom complex, medical treatment. Ohio State Med. Jour., 31:263 (April 1) 1935, and Meniere's symptom complex: medical treatment. Ann. Otol., Rhinol., and Laryngol., 43:1035, (Dec.) 1934.
4. Shuster, Benjamin H.: Graduate lecture 1938, Vertigo.
5. Trousseau: Gaz. d. hop., 35:153, (April 3) 1862.

SYMPATHETIC NEUROBLASTOMA*

Report of Case

O. B. FESENMAIER, M.D.
New Ulm, Minnesota

SYMPATHETIC neuroblastoma of the left suprarenal gland was first described by Hutchinson in 1907.[2] Since then a few more cases have been reported and additional studies have been made regarding this condition. Neuroblastomas are neurogenic in origin and are found in the adrenal medulla or in the sympathetic ganglions along the spine. Neuroblastomas are also known as neurocytomas or sympathoblastomas. The metastases, which always occur early, appear in the retroperitoneal glands, the orbits and the long bones. The metastatic masses, which are firmly attached to the bone as in this case, contain many bony spicules. The primary tumor, which invariably involves the left adrenal gland, varies in size and is usually palpable through the abdomen. In this case, the tumor was not palpable.

Microscopically, one sees a large number of round cells with hyperchromatic nuclei, fibrils arranged in longitudinal bundles or compact round balls, and imperfect ganglion cells. The round cells are arranged around these fibrils to form rosettes. The formation of rosettes by the round cells is a characteristic microscopic finding.

Most often neuroblastomas are seen in young male children, especially those under the age of four.

In sympathetic neuroblastoma, the patient usually complains of pain in the extremities, the back, or in the neck. The pain may be of a dull aching type or it may simulate pain found in rheumatic fever. The pain may be referred only

*Read before the Southern Minnesota Medical Association, New Ulm, Minnesota, September 18, 1939.

to the thigh, leg, and spine or it may be general throughout the body. Movement of any involved part increases the pain. At times, an abnormal gait may be the first symptom. Attacks like this may last for a few weeks, subside for a while, only to recur again.

In some cases, pain in the abdomen leading to the discovery of a palpable mass[4] will be the initial finding. Often swelling of the eyelids, or protrusion of the eyes may attract the attention of the parents. The face may also become involved due to metastases. Frequently, the eyelids are swollen and discolored. Protrusion of one or both eyeballs occurs and may be so marked as to cause necrosis. A gradual loss of eyesight is a common complaint. Leinfelder[3] states that the ocular signs are caused by increased intracranial pressure and metastases to the orbit. Often nodular swellings are palpable on the skull. Swallowing or other movements of the jaw causes pain in some cases. Frequently a marked facial palsy is present. The patient may also complain of ringing in the ears and a gradual loss of hearing.

The glands, especially in the inguinal and the submaxillary region, are often enlarged and painful. This may be an early or late manifestation. Other clinical findings are a loss of weight and appetite, vomiting, marked emaciation and weakness, irritability, nervousness, fever, sweats, tachycardia, dyspnea, and incontinence of the bladder and bowel.

In early cases, x-ray examination of the bones usually reveals no pathological changes. In this case, no changes were noticed when the patient was seen by another physician. Later on, x-ray examination of the skeleton reveals interesting findings. Marked areas of intensive bone infiltration appear in the pelvis, femur, skull, and spine. The bones show a granular type of osteoporosis due to minute foci of resorption. The x-ray picture reveals an intensive and diffuse process of new bone formation and also destruction of bone. Doub[1] states that in many instances the resorption is of uneven density, suggesting a diffuse infiltration rather than a massive destruction. A striking reaction of the periosteum is its elevation with a diffuse infiltration of osseous tissue and the formation of fine spicules.

The blood picture shows a pronounced secondary anemia, a non-progressive erythrocytic regenerative shift and considerable myeloid immaturity. The presence of myeloid cells makes it difficult at times to differentiate between the leukemias and neuroblastoma.

Neuroblastoma is a very mystifying disease to diagnose. It must be differentiated from the leukemias, especially the aleukemic leukemia, chloroma, Ewing's sarcoma, myeloma, hyperparathyroid disease, rheumatic fever, tuberculosis, and hypernephroma. Neuroblastoma must always be considered in young male children when pain in the bones, bulging of the eyeball, and abdominal mass are present.

The prognosis is hopeless. There is a rapid and downward progress which is only interrupted by some abatement of symptoms for a few weeks, followed by relapses and finally death within a couple of months. No treatment is effective. Radiation treatment offers only mild amelioration and at times prevents necrosis of the eyeball.

Case Report

The patient, a white boy of fourteen, was seen by me on February 7, 1937, complaining of rheumatic-like pain in the left shoulder, elbow, hip, and in the back. The patient first noticed the pain in the hip during the summer of 1936. The pain would last for a few weeks, then remain quiescent for a while and then was succeeded by a similar recurrence. The number of attacks gradually increased during the fall of 1936, preventing him from going to school. He began to limp and later needed assistance in walking. During the last three weeks he was bedridden.

Physical examination revealed a pale, undernourished and acutely ill boy. The pulse was regular, the rate was 130, and the temperature was 100. Both eyelids were slightly swollen but the eyeballs showed no protrusion. Examination of the chest revealed nothing of importance except a strong apical impulse. Abdominal examination was essentially negative. The extremities showed a slight wasting and the right leg was slightly spastic. Movement of the arm, legs, or back caused severe pain.

The urine was essentially negative. Blood count showed 3,000,000 red cells, 9,000 white cells, 42 per cent hemoglobin, and 0.6 color index. Blood smear examination revealed some anisocytosis and poikilocytosis, 3 juveniles, 44 stab cells, 24 segmented cells, 26 lymphocytes, and 3 monocytes. Later on some myelocytes appeared. The blood Wassermann reaction and Mantoux skin tests were negative. The blood sedimentation rate was greatly increased.

My first impression was rheumatic fever, but as the case mysteriously progressed with new symptoms and signs, rheumatic fever was ruled out.

The pain on the left side gradually subsided while the right hip and leg increased in severity during the next few weeks. It was noted also that the right leg was now flexed and externally rotated and the head of the right femur appeared to be displaced backward. These clinical findings suggested a posterior dislocation of the femur resulting from some undetermined bone pathology. The patient was able to enter the hospital on February 17, 1937, for further clinical investigation.

X-ray examination of the hip showed a posterior

dislocation of the right hip with formation of a new socket on the outer aspect of the ilium. The pelvis, femora, and the skull showed a granular type of osteoporosis and a diffused process of new bone formation. The periosteum was elevated, especially in the femora. Marked bony infiltration was also seen on the lower end of the left femur. A urogram showed no abnormal findings.

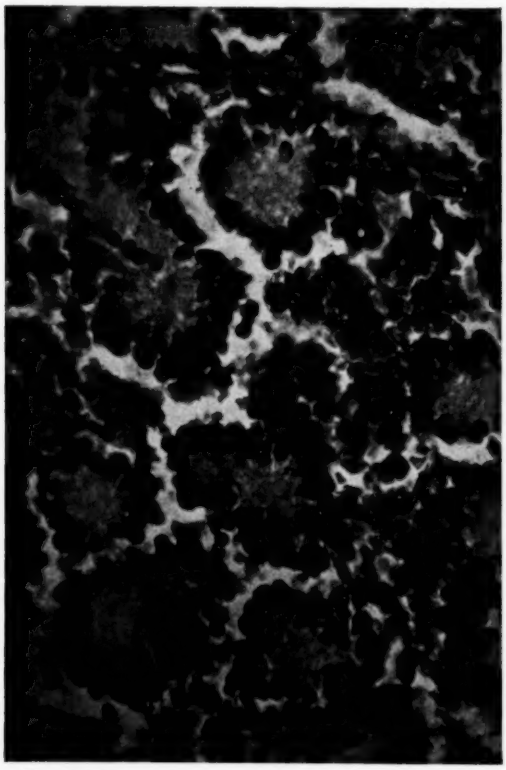

Fig. 1. Microscopic section of neuroblastoma involving left adrenal gland showing typical rosettes formed by round cells.

The course during the succeeding weeks was downward. Both eyelids began to swell and gradually the eyeballs became more protruded. There was pain upon swallowing and ringing in the ears. Some abdominal pain was present but no mass was palpable. At this time, my impression was that of neuroblastoma of the left adrenal gland but hyperparathyroid disease had to be ruled out. The blood calcium was normal. However, such a finding frequently occurs in hyperparathyroid disease. To a certain extent the clinical manifestations definitely pointed towards neuroblastoma. But if an incorrect diagnosis of neuroblastoma had been made when really a hyperfunctioning parathyroid gland was the causative factor, it would have been regretful indeed, since removal of the enlarged parathyroid gland would give a good result.

A decision was made to explore the parathyroid gland, since there was nothing to lose and everything to gain by such an operation. The operation was performed by Dr. Dubbe and myself but no pathology was found. With this disheartening knowledge a definite clinical diagnosis of neuroblastoma was made and no hope for a cure was given to the parents. The patient was later seen at an outside clinic where a diagnosis of multiple central nervous system metastases possibly due to a hydronephroma was made.

During the summer of 1937, there was a progressive downward course. The eyes became more protruded than ever and blindness was nearly absolute. Diffused enlargements appeared on the frontal area of the skull. The coronal sutures were somewhat separated. The lower jaw was also studded with small round masses. The bowels and bladder were incontinent and the crest of the left ilium was enlarged. The patient gradually became weaker and he died on November 23, 1937. The illness lasted a year and four months.

Postmortem examination of the abdomen revealed rounded and flattened masses attached to the inner aspect of the left and right ilium. The mass on the left side was removed with difficulty and measured 6 cm. in length, 4 cm. in width, and 3 cm. in thickness. The mass was well encapsulated except for the portion which was attached to the ilium. Many bony spicules which were attached to the ilium projected into the tumor. The mass, which was smaller on the right side, was not removed. The lymph nodes along both sides of the spine were enlarged and bright red in color. The adrenal glands were normal in size. Sectioning of the left gland revealed a small irregular but well localized dark area about 1 cm. in diameter. The right gland showed no apparent pathology. Histological examination of the left adrenal gland and of a lymph node showed the typical rosette formation composed of small round cells (Fig. 1) which is found in neuroblastoma.

References

1. Doub, H. P.: Roentgen aspect of sympathetic neuroblastoma. Jour. A.M.A., 109:1188, (Oct. 9) 1937.
2. Hutchinson, R.: Suprarenal sarcoma in children with metastases in the skull. Quart. Jour. Med., 1:33, 1907.
3. Leinfelder, P. J.: Ocular complications in neuroblastoma. Am. Jour. Ophth., 18:938, (Oct.) 1935.
4. Peterman, M. G.: Suprarenal tumor with metastases. Am. Jour. Dis. Child., 43:655, (Mar.) 1932.

DIAGNOSTIC METHODS IN UNDULANT FEVER (BRUCELLOSIS) WITH RESULTS OF A SURVEY OF 8,124 PERSONS

S. E. Gould, Eloise, Mich., and I. F. Huddleson, East Lansing, Mich. (*Journal A. M. A.*, Dec. 11, 1937), describe briefly the performance and interpretation of the laboratory methods which at present are believed to be most useful in the diagnosis of undulant fever (brucellosis) and report some of the results of a survey of the incidence of brucellosis in a large county hospital. An unusual opportunity to study the incidence of Brucella infection presented itself at Eloise Hospital and Infirmary, whose milk supply was partly infected with Brucella. All persons in the institution were first tested intradermally with brucellergin. Among 8,124 persons tested, 845, or 10.3 per cent, showed positive brucellergin reactions. The incidence roughly paralleled the average length of stay in the various groups in the institution. The incidence was lowest among the hospitalized group (6.2 per cent), whose average stay was the shortest, and greatest among the mental patients (15.4 per cent), whose average stay was the longest. The brucellergin test was found to be the most sensitive test in the diagnosis of brucellosis. If the test is negative, brucellosis will usually be ruled out. If the test is positive, the opsonic test should then be performed to determine whether infection or immunity is present. A negative agglutination test does not rule out Brucella infection. The agglutination test is diagnostic only in a small percentage of cases and gives no information as to the immune status of the subject. Carriers of Brucella may be of some importance in the spread of the disease.

CASE REPORTS

PNEUMOCOCCUS (TYPE III) MENINGITIS WITH RECOVERY

L. R. CRITCHFIELD, M.D., L. T. SIMONS, M.D., T. H. EMMENS, M.D., and F. W. NEWELL, M.D.

Saint Paul, Minnesota

The mortality of pneumococcus meningitis is difficult to compute because of the lack of a large number of figures concerning its incidence. However, most authorities consider it almost universally fatal.[2] Tripoli[14] reports 468 cases of purulent meningitis occurring in a ten-year period at the Louisiana State Charity Hospital with 111 (24 per cent) being due to the pneumococcus with but one recovery and that in the case of an untyped organism. At Boston Children's Hospital 74 (26 per cent) of a series of 284 meningitides were due to the pneumococcus with one recovery, that being a type XII organism.[3] This high incidence has not been noted at Ancker Hospital, where in the past nine years only 5.5 per cent of the cases of meningitis were caused by the pneumococcus with only one recovery here reported. Neal[4] found only sixty-six cases of meningitis due to this organism in 1,259 cases, and then (1920) considered the disease universally fatal. Shaffer,[11] in 1938, considered the disease as carrying a mortality of at least 98 per cent.

There are, however, numerous reports of recoveries from this infection in the literature. One hundred and eighty-five cures of all types of pneumococcus meningitis were reported prior to 1937 and in that year seven additional were reported.[13] With the widespread use of sulfanilamide and related drugs since then, there have been increasing numbers of recoveries reported.

No special type of pneumococcus predominates as a cause of meningitis but the frequent occurrence of the Type III organism secondary to disease of the middle ear or paranasal sinuses is well known. Neal[9] found it in thirty-five out of seventy-five cases of pneumococcus meningitis of otogenic or paranasal sinus origin. The organism was the cause of meningitis in only twelve cases of meningitis in a series of 139 caused by infections other than those mentioned. Neuman[10] analyzing 101 cases of otogenic meningitis found the pneumococcus Type III organism to be the offender in seventy-two cases and other types the cause in sixteen.

In spite of this evidently large incidence of Type III pneumococcus meningitis, there have been very few recoveries noted in the literature, although this number is enlarging rapidly with the use of sulfanilamide and related compounds. Allmen[1] in 1937 found but four previous cures of the infections and to this added one of his own which was treated with subarachnoid drainage and radical mastoidectomy. Two of the patients received antipneumococcus serum alone, one ethyl hydrocupreine, and other case potassium permanganate enemas only. Gubner[5] and Garfin[3] reported recoveries following radical mastoid surgery and sulfanilamide therapy. Magruder[8] had a recovery with sulfanilamide, myringectomy and subrachnoid drainage, as did Silverman.[12] Silverman's patient died after four months with a clinical meningeal reaction but no organisms in the spinal fluid. MacKeith[7] had a recovery following remission when the drug was discontinued using M and B 693 (sulfapyridine) and this was apparently the first recovery from a Type III organism in which this drug was used.

In October, 1939, Hodes, Gimbel and Burnett[6] reported seventeen cases of pneumococcus meningitis, with eight recoveries. They used sulfapyridine and also sodium sulfapyridine. Two of these cases of Type III pneumococcus meningitis were isolated.

Case Report

L. R., an eighteen-year-old young woman, white, was admitted to Ancker Hospital, Saint Paul, on November 21, 1939. She was very lethargic and semi-rational, being aroused only by loud and persistent questioning. She complained of severe headaches, and stiff neck and back. The history obtained from relatives revealed that seven days prior to admission she had developed a cold, followed five days later by pain in the right ear and generalized headache. Headache became steadily worse and purulent discharge from the right ear was noticed on November 19. The symptoms became progressively worse. On the day before admission she screamed several times and had emesis. No convulsions or paralysis were evident.

Past history revealed that the patient had had frequent colds and in 1938 had had acute purulent bilateral otitis media.

On admission the patient was very listless and did not respond well to questioning. She was well nourished. Her face was flushed and she appeared to be acutely ill. Temperature was 102.8, pulse 125, respiration 16, blood pressure 130/70. There was a purulent discharge in the right external auditory canal. Fundiscopic examination showed a slight papilledema of both discs. She was in opisthotonos with marked rigidity of neck and back. Kernig and Brudzinski signs were positive. The tendon reflexes were all positive. The spinal fluid was under increased pressure and heavy ground glass in appearance.

Admission Diagnosis: Acute suppurative otitis media (R); purulent meningitis.

November 21, 1939, 7:30 a. m.—Spinal fluid 15 c.c. pressure III, ground glass appearance. Leukocytes 7,800 (P.M.N. 86 per cent). No organisms found in direct smear. T. 102. P. 100.0, R. 16.

Smears made from purulent discharge from right ear were investigated thoroughly in an attempt to determine the bacterial cause of the meningitis. Many Gram-positive cocci were found but further differentiation was not possible during the first 24-hours. On the basis of clinical possibility sulfanilamide was or-

dered and also 20 c.c. of polyvalent antistreptococcus serum was administered (intramuscularly). Headache controlled by codeine sulfate.

12:00 noon—T. 105.2. P. 128.

3:00 P.M.—25 c.c. spinal fluid removed.

10:00 P.M.—25 c.c. spinal fluid of ground glass appearance. Pressure 425 mm. Headache improved.

Blood examination: Hemoglobin 65 per cent—R.B.C. 3,340,000; W.B.C. 28,300; P.M.N. 92 per cent; Lymph. 8 per cent.

Urinalysis: amber; acid; sp. gr. 1,030; heavy traces of albumin.

Transfusion 200 c.c. of blood and 500 c.c. of normal salt solution were administered intravenously.

November 22, 1939.—T. 103.6. Severe headache. Some cough. Chest finding negative. Spinal fluid, 25 c.c. Pressure, 300 m.m., 2,670 leukocytes.

Laboratory Report: Type III pneumococcus found in cultures of first spinal fluid obtained.

Therapy changed. Sulfanilamide discontinued. Sulfapyridine administered, two doses of grains XXX each at four-hour intervals and then grains XV q.4.h. accompanied with equal amounts of sodium bicarbonate.

Transfusion—250 c.c. blood, 400 c.c. n.s.sol.—intravenously.

7:15 p. m.—80 c.c. of 5 per cent sodium sulfapyridine solution (60 grains) administered intravenously. Patient had emesis following this injection and emesis continued at intervals for thirty-six hours.

9:15 p. m.—Spinal fluid 30 c.c. slightly cloudy. 3,600 leukocytes (P.M.N. 83 per cent).

A consultant otologist recommended paracentesis of the right ear drum to increase drainage. This was performed. The question of immediate surgery of the right mastoid bone was considered. Although there was some tenderness over the mastoid body, conservative management was decided upon.

November 23, 1939—12:01 a. m.—T. 100.

40 c.c. 5 per cent sodium sulfapyridine (30 grains) administered intravenously. Emesis.

7:00 a. m.—40 c.c. 5 per cent sodium sulfapyridine (30 grains) intravenously. Free sulfapyridine 17.3 mgm. per 100 c.c. of blood.

3:00 a. m.—Spinal fluid 15 c.c. Leukocytes, 572.

Therapy: Sulfapyridine gr. XV, given per os.q.4.h. x 6.

November 24, 1939, 1:00 p. m.—T. 102. Spinal fluid 15 c.c. almost clear. Leukocytes, 218.

Transfusion, 250 c.c. blood, 500 c.c. n.s.sol.—intravenously.

Sulfapyridine blood concentration, 10 mgm. per 100 c.c.

November 25, 1939.—T. 102. Definite improvement. Spinal fluid, 15 c.c. Leukocytes, 138. Sulfapyridine blood concentration, 8.0 mgm.

November 26, 1939.—T. 101. Some headache. Sulfapyridine blood concentration, 7.3 mgm.

November 27, 1939.—T. 102.2 Increase of headache.

Spinal fluid 25 c.c. almost clear. Leukocytes, 50.

40 c.c. 5 per cent sodium sulfapyridine (30 grains) intravenously.

Transfusion—250 c.c. blood, 500 c.c. n.c.sol. + 5 per cent glucose.

Sulfapyridine blood concentration, 9.3 mgms.

Sulfapyridine spinal fluid concentration, 5.0 mgms.

November 28, 1939.—T. 101. More responsive, clear mentally.

Transfusion—blood 250 c.c., 5 per cent glucose in n.s.sol. 500 c.c.

Sulfapyridine blood concentration, 7.3 mgms.

Betaxin, 1 c.c. subcutaneously b.i.d.

Lextron, 2 caps. t.i.d.

Urine, albumin ++.

November 29, 1939.—T. 100.8. Spinal fluid 15 c.c.; clear; 35 leukocytes. Urine, albumen + (thereafter urine was normal on all examinations. No red blood cells reported at any time).

December 1, 1939.—Mentally clear. Very little stiffness of neck.

Sulfapyridine blood concentration 8.3.

Sulfapyridine dosage reduced to grains X q.4.h. x 6

Hemoglobin 59 per cent. White blood count, 13,050.

December 14, 1939.—Spinal fluid 20 c.c., clear. Seventeen leukocytes.

Cultures of spinal fluid show no growth.

Sulfapyridine spinal fluid concentration, 3.4 mgm.

Sulfapyridine blood concentration, 5.4 mgm.

Blood sugar, 156 mgm. per 100 c.c.

Spinal fluid sugar, 52 mgm. per 100 c.c.

Blood calcium, 13 mgm. per 100 c.c.

P. S. P. test—61 per cent in two hours.

Dosage of sulfapyridine was gradually reduced to gr. X b.i.d.

Patient was discharged from the hospital on December 24, 1939, at which time she was free from evidence of disease. On January 8, 1940, she continued to remain well and was permitted to return to her home out of town.

In a discussion of this case the following considerations are worthy of mention:

1. Early diagnosis of the bacterial agent causing purulent meningitis. At the time of the *first spinal drainage* steps should be taken toward diagnosis of the causative organism. This calls for active coöperation and skill on the part of medical and laboratory staff.

2. Recovery in this case, in all probability, depended upon the early and sufficient administration of sulfapyridine and its sodium salt. The blood concentration of the drug during the first days was high. The amount of drug lost by emesis is not known. In the presence of a disease which has a fatal expectancy, chemotherapy should be carried out energetically.

3. Apparently the only symptom of sulfapyridine toxicity was the vomiting. Administration of intravenous blood and saline solution may have played its part in protecting against more serious toxemia. Frequent studies of blood and urine permitted us to observe the patient's response to the drug.

4. The decision to adopt conservative treatment of the evident right mastoiditis depended upon (a) the fact that intravenous sodium sulfapyridine was available and being administered and (b) that reports from the literature[6] advise against surgical interference in like circumstances.

We express appreciation to Dr. W. W. Spink of the University of Minnesota for the supply of sodium sulfapyridine which was made available for our use in this case.

References

1. Allman, C. H.: Meningitis due to type III pneumococcus. Arch. Otolaryngol., 25;65, (June) 1937.
2. Cecil, R. L.: Textbook of Medicine, 3rd Ed., p. 120.
3. Garfin, S. W.: Meningitis (otitic) due to type III pneumococcus: operation, sulfanilamide, and intraspinal injection of patient's own serum; recovery. Laryngoscope, 49:23, (January) 1939.
4. Goldstein, H. I., and Goldstein, H. Z.: Pneumococcus meningitis and endocarditis. Inter. Clin., 3:155, (September) 1927.
5. Gubner, J.: Recovery of a patient with type III pneumococcus meningitis of otitic origin. Arch. Otolaryng., 28:241, (August) 1938.
6. Hodes, H. L., Gimbel, H. S., and Burnett, G. W.: Treatment of pneumococcic meningitis with sulfapyridine and its sodium salt. Jour. A.M.A., 113:1614, (October 28), 1939.
7. MacKeith, R. C., and Oppenheimer, G.: Pneumococcal meningitis. Lancet, 1:1099, (May 13) 1939.
8. Magruder, R. G., and D. O. Nichols: Report of a case of type III pneumococcus meningitis with recovery, in which sulfanilamide was used. Virg. Med. Mon., 65:759, (December) 1938.
9. Neal, J., Jackson, H. W., and Applebaum, E.: Comprehensive study of meningitis secondary to otitic or sinus

infection. Ann. Otol., Rhin. and Laryngol., 43:658, (September) 1934.
10. Neuman, H.: Bacteriology of otogenic meningitis. Ztschr. f. Hals, Nas. u. Ohr., 12:165, 1925.
11. Shaffer, M. I., Enders, J. F., and Wilson, J.: Effect of artificial fever and specific antiserum on organisms present in a case of type III pneumococcus meningitis. Jour. Clin., 17:133, (March) 1938.
12. Silverman, D., and Thorner, M.: Treatment of meningitis due to pneumococcus type III with sulfanilamide; recovery. Arch. Otolaryngol., 30:431, (September) 1939.
13. Slaughter, R. F., and Sydensticker, V. P.: Continuous catheter drainage of the subarachnoid space in pneumococcus meningitis. South. Med. Jour., 31:1269, (December) 1938.
14. Tripoli, C. J.: Bacterial meningitis; comparative study of the various therapeutic measures. Jour. A.M.A., 106: 171, (Jan. 18) 1936.

SUBDIAPHRAGMATIC ABSCESS*

Report of Case

F. C. SCHULDT, M.D., F.A.C.S.

Saint Paul, Minnesota

The patient, a married woman of forty-seven, complained of a pain in the right abdomen on my first visit, October 26, 1935. She talked constantly in a rambling sort of way due to the fact she had been recently drinking gin and not eating food.

On examination there was a marked tenderness over the gall-bladder region but the abdomen otherwise was normal and the chest was normal.

A few days later the scleræ were jaundiced and she developed hallucinations, seeing fantastic objects in the room. She was then sent to the hospital, where we found the leukocyte count 12,000; temperature 101, and pulse 110. The pupils were pin point in size at this time as well as at my first visit. The Widal reaction was negative. The Schilling test showed a degenerative index of 50. The right posterior base of the chest was then dull and the x-ray examination showed a right lower lobar pneumonia.

During the following month her condition became gradually worse. X-rays of the chest were made repeatedly and showed an increase in density in the right chest, but whether this was above or below the diaphragm was uncertain. The heart was pushed to the left. There was a generalized edema of the whole back. The abdomen became distended, tympanitic and showed the presence of fluid. A lower lobe pneumonia then also developed in the left lung.

The leukocyte degenerative index rose to 73. Blood chemistry values for creatinine, urea and urea nitrogen were normal. At no time was the cough a distressing symptom. The patient took nourishment well and had good elimination.

On November 28, 1935, something happened. She developed a nausea and vomited. She then became dyspneic and had cold perspiration with the pulse up to 134 and respiration of forty. Severe pain developed in her upper right abdominal quadrant.

The next day a re-ray of the chest was made, which showed that the right diaphragm was raised to the level of the sixth costal interspace. The heart was markedly displaced to the left, the apex being pushed to the left chest wall. The outline of the right diaphragm could be made out 7.5 cm. higher than the left. Above the diaphragm was still unresolved pneumonia and some fluid. The x-ray diagnosis was, besides the pneumonia still present, fluid under the diaphragm, a subphrenic abscess.

Operation.—On November 30, 1935, under spinal anesthesia (spinocain 1.5 c.c.) a three inch incision was made just below and parallel to the costal border. Upon entering the abdomen considerable free fluid was found. The upper surface of the liver presented with no sign of intestine, stomach or omentum. The high position of the diaphragm, according to the x-ray, and the low position of the liver indicated there must be a marked interposition of fluid between the liver and the diaphragm. With a syringe and needle we punctured the area above the liver and got some cloudy fluid, which was cultured. (This revealed pus cells and after a week the culture showed a micrococcus tetragenous.) With blunt dissection we broke through some adhesions above the liver to be met with a gush of at least 500 c.c. of fluid. After the release of this fluid the liver immediately receded upward to its normal position and now we were able to visualize the gallbladder, which was very large and acutely inflamed. The gallbladder was opened and contained thick inspissated bile and five small gallstones. A rubber tube drainage was established. Two drains were placed above the liver and the incision was closed.

Postoperatively the bile drainage was satisfactory. Her temperature ranged from normal to 101° and her condition was considered fair.

On the ninth postoperative day a pyocyaneous infection developed which was quickly corrected with boric acid powder.

The patient continued to improve and left the hospital on December 30, 1935. The bile drainage stopped ten days later. She continued to run a fever for twenty more days. Recovery followed and an x-ray taken on May 27, 1936, showed the diaphragm in normal position.

Discussion

This case proved of interest from a diagnostic standpoint. There is no question but that the alcohol consumption was beyond moderation and left its damaging influence upon her resistance. With a marked icterus of the scleræ, a dark brown urine and upper right quadrant pain, gall-bladder disease was obvious, but operation could not be considered because of the delirium present. The first improvement came in three days when her delirium cleared, but this was immediately followed by a pneumonia of the right lung base without a chill or cough, soon followed by a pneumonia of the left base. During her whole illness she exhibited so little cough that there was no suspicion of pneumonia. The cause for the persistent pin point pupils during the first week of illness was obscure as she denied having taken any drug, and the pupils remained pin point for days in spite of the abstinence from all opiates. Here we have a number of lesions above and below the diaphragm, consisting of a peritonitis, ascites, cholecystitis, cholelithiasis, subphrenic abscess, right pleuritis, right and left bronchopneumonia. This constitutes an extensive involvement in which mortality is high. It would seem that the forerunner of the process was the cholelithiasis. Whether a stone had passed through the cystic and common duct is of no great moment, but there was a cholecystitis of low grade, with a cystic-duct obstruction. The icterus was caused either by a temporary common-duct stone obstruction or a cholangitis. There was no common duct stone palpable at operation and there has been no gallstone attack since, a lapse of over four years. Up to this point we frequently see this clinical picture. The enigma begins here. The gener-

*Presented before the Saint Paul Surgical Society, January 13, 1938.

alized tender abdomen with a moderate tympanitis was confusing. Although we were dealing with a peritonitis yet there was no peritonitic ileus. In five days the icterus cleared and the urine cleared, yet the peritonitis and the blood picture indicated an increasing toxic state as shown by the increase from 50 to 70 toxic cells in the Schilling test.

Now the drama scene changes. While we were watching for the mental bewilderment to clear up, by giving food instead of alcohol, bronchopneumonia of both lung bases developed. This continued for weeks with the temperature never rising over 103. She was in a delirium the greater part of the time. Although at times there was a low urine output of 200 c.c. a day, normal blood chemistry values were reassuring.

After two weeks the scene again changed. The abdomen, instead of being tympanitic, had a dull note and was large. A water impact was present. Elimination was satisfactory. The development of the ascites was concomitant with the rising of the density level in the chest x-ray. But why? What was the process? Then suddenly after exactly one month in the hospital, a turn to the worse occurred. There had been no cough, cyanosis or difficulty in breathing, and the patient had taken nourishment well and had been having no pain of any consequence. Then followed a severe pain in the upper right quadrant, nausea, vomiting and a marked dyspnea. There was outspoken resistance over the gallbladder region. A re-ray now showed the density level extending one rib higher, nearly to the sixth rib. Because we found only a small quantity of sterile fluid at a former needle puncture of the chest, we agreed with the diagnosis of the x-ray department of a subphrenic abscess. Spinal anesthesia was chosen. Anesthesia was perfect, although we were operating high at the diaphragm. The incision was very short and parallel to the costal margin, giving us full benefit of the incision length. It was a rare picture to see the dome of the liver presenting in the incision and none of the usual abdominal contents. Much of the ascitic fluid of the abdomen escaped as we were studying our plan of attack. It then became clear that this imprisoned fluid above the liver was a part of the general peritonitis. For weeks, adhesions had been forming and had very successfully divided the abdomen from the area between the liver and diaphragm. The impounded peritonitic fluid above the liver was now our subphrenic abscess. After the evacuation of the fluid, the field has entirely changed. The very distended gallbladder, the origin of all the trouble, demanded attention despite our anxiety to do little because of the bilateral pneumonia. Although the incision was very short, yet we could readily do a drainage operation. Some questions remain puzzling. Was the pneumonia an extension by lymphatics from the abdomen or was it due to the usual cause of upper respiratory infection? Why should there be a general peritonitis when we did not find any gallbladder perforation? Although convalescence was slow for five weeks, the patient completely recovered and has remained well.

VOLVULUS OF THE CECUM, A POSTOPERATIVE COMPLICATION*

CLAUDE F. DIXON, M.D., and JOSEPH M. MILLER, M.D.

Rochester, Minnesota

Complications of any type may occur in the period following abdominal operations. Intestinal obstruction, both acute and subacute, referable to a variety of causes, will occasion severe apprehension on the part of the surgeon. Adhesions or inflammatory conditions subsequent to abdominal surgical procedures account for the majority of interruptions of intestinal continuity. Response to conservative treatment, emphasizing the principles of intestinal intubation as outlined by Wangensteen and others, is exceptionally effective in many instances of complete or incomplete occlusion of the intestine.

Obstruction of the bowel, referable to rarer etiologic agents, also may occur and, as far as the colon is concerned, volvulus may occur in either the sigmoid flexure or ileocecal region. This accident seems to occur when an exceptionally long mesentery is present, the sigmoid being involved much more frequently than the cecum. When a section of bowel undergoes rotation around its mesenteric axis, or occasionally around its own axis, an isolated loop is formed with obstruction at both ends. The vessels supplying the region are also compressed to a varying degree. In addition, increasing distention of the loop causes further impairment to the blood supply by compression of the capillaries. There also is present increased permeability of the intestinal wall and anoxemia, necrosis, and gangrene are the end-results, unless there is early surgical intervention.

Postulating that an elongated mesentery is present in the right half of the colon, volvulus of the cecum may occur with the twisting in either direction. The direction of the twist depends to a large extent on the degree of mesenteric development present. When the cecum, ascending and part of the transverse colon are found to have a mesentery common with the small bowel, the rotation is usually in a counterclockwise direction. Of fifty cases collected by Faltin, the rotation in thirty-five was counterclockwise and was clockwise in only fifteen. When more development is present and a greater amount of the colon distal to the cecum is fixed, rotation occurs in a clockwise direction more frequently. The displacement of the cecum will depend on the length of the mesentery. At operation, the greatly enlarged distended cecum may be found in any portion of the abdomen, even in the left upper abdominal quadrant.

In acute torsion, the sequence of events is rapid. Pain of a crampy type, rather severe in nature, which is more or less localized in extent, is present. Early tenderness, marked constipation, occasional shock and rapid localized distention are found.

Such a picture, presented during postoperative convalescence, recently has been observed at The Mayo Clinic.

*From the Division of Surgery, The Mayo Clinic (Dixon) and The Mayo Foundation (Miller), Rochester, Minnesota.

Report of Case

Case 1.—A woman, aged fifty-three, had suffered from intermittent attacks of severe upper abdominal pain of colicky character for ten years. Clay-colored stools had been noted, but there was no history of jaundice. The colics had not been severe for two years prior to registration at the clinic. A qualitative food distress appearing especially after ingestion of fatty foods had been constantly present. Results of physical examination were normal save for moderate diastasis recti and a small umbilical hernia. Pelvic examination revealed a relaxed perineum, a lacerated and slightly eroded cervix, and a retroverted uterus.

Roentgenographic studies of the gall bladder, following the administration of dye, showed the organ to be non-functioning and to contain stones. The abdomen was explored through an upper right rectus incision with the patient under the influence of spinal anesthesia. The gall bladder showed chronic inflammation, contained stones, and was removed. The pancreas, stomach, duodenum, and appendix were explored and were considered normal. The uterus, enlarged to about four times normal size, was in a position of retroversion.

Convalescence of this patient was without incident until the evening of the fourth postoperative day, at which time she complained of mild lower abdominal pain. Examination of the abdomen revealed no abnormalities. She was examined at frequent intervals during the following four or five hours. Five hours after the onset of symptoms the patient's distress became increasingly severe and the pain, at this time cramp-like in character, seemed extremely severe. A distended mass was found in the lower portion of the abdomen to the right of the midline. The body temperature was 99° F. (37.2° C.). The pulse was only slightly elevated. Catheterization was carried out to rule out the possibility of a distended bladder. Volvulus of the sigmoid was considered likely and preparations for operation were made.

A low midline incision was made and on opening the peritoneum, a large amount of serosanguineous fluid escaped. The cecum was markedly enlarged and was free. Volvulus, including the terminal portion of the ileum, cecum, and part of the ascending colon, was present, with torsion amounting to two complete turns in a clockwise direction. Embarrassment of the circulation to the twisted bowel had progressed to such degree that the bowel appeared gangrenous. The cecum, purple in color, had exceedingly thinned walls and one of the longtitudinal bands had ruptured. The most conservative procedure seemed to be exteriorization of the entire volvulus and this was done. Clamps were applied to the normal part of the colon distal to the volvulus, and to the ileum proximal to it, and the twisted bowel was amputated by cautery. Twenty cubic centimeters of coli-bactragen was poured in the peritoneal cavity and the abdominal layers were closed around the exteriorized loops of bowel.

Therapeutic aids employed during the immediate postoperative course included a transfusion of blood and the placing of the patient in an oxygen tent. The ileum was punctured immediately proximal to the clamp twelve hours postoperatively. The patient, rather ill for a period of a week, made an excellent recovery.

Subsequently, the spur between the loops of ileum and colon was destroyed by means of clamps, and closure of the fecal fistula was carried out four weeks postoperatively. On final dismissal of this patient six months postoperatively, the wounds were healed except for a small amount of discharge at the site of closure of the intestinal stoma.

The mortality accompanying volvulus of the cecal region is reported to be high. Chalfont was able to collect 118 cases and he added one of his own. Twenty-three of the patients were not operated on and all twenty-three died. Of the remaining ninety-six who were subjected to some type of surgical procedure, fifty-seven, or 59 per cent, died. The total mortality, both operative and non-operative, was 67 per cent.

When the condition occurs as a complication following a recent operative procedure, the mortality necessarily would be expected to be somewhat higher than if volvulus had occurred primarily. Only two instances of torsion of the ileocecal region following an operation have been found in the literature. In the case reported by Nelson, in which volvulus occurred on the fourth day after a pelvic operation, untwisting of the bowel and performance of cecostomy on the tenth day resulted in cure. Likewise, the patient of Jellinghaus recovered after reduction of volvulus on the sixth day following cesarean section. The condition had occurred on the previous day. It is unusual that these two patients and the one reported in this paper all recovered.

A careful follow-up in the postoperative period of any operation is extremely necessary. With the advent of symptoms suggesting interruption of intestinal continuity, proper treatment must be instituted immediately. A fortunate result attended such therapy in the case reported herein.

References

1. Chalfant, S. A.: Torsion of the cecum with review of the literature and report of a case. Am. Jour. Obst. and Gynec., 2:597-600, (Dec.) 1921.
2. Faltin: Quoted by Lockhart-Mummery, J. P.: Diseases of the rectum and colon and their surgical treatment. Baltimore: William Wood & Company, 1934, 605 pp.
3. Jellinghaus, C.: Uber Volvulus nach Kaiserschnitt. Zentralbl. f. Gynäk., 56:1289-1290, (May 21) 1932.
4. Nelson, H. M.: Postoperative volvulus of the cecum. Am. Jour. Surg., 5:398-400, (Oct.) 1928.
5. Wangensteen, O. H., Rea, C. E., Smith, B. A., Jr., and Schwyzer, H. C.: Experiences with the employment of suction in the treatment of acute intestinal obstruction; a reiteration of the indications, contraindications, and limitations of the method. Surg., Gynec. and Obst., 68:851-868, (May) 1939.

HISTORY OF MEDICINE IN WINONA COUNTY

WINONA City was called Wabasha Prairie in 1852. It was not a town, but merely a favorable town site, which had been used until the year before as an Indian camping ground. Of the few buildings there, Goddard's was the best known, the most popular and commodious. Settlers considered themselves fortunate if they could get in at Goddard's during the sickly season, for they felt sure of kind attention and watchful nursing on the part of Mrs. Goddard. The extremely high water of the early spring was followed by low water accompanied by hot and dry weather. This occasioned a general epidemic of severe forms of malarial disease which in many cases was fatal. Wabasha Prairie and the colony at Minnesota City were seriously affected by it, and there were no physicians there at the time.

All summer the heat and drouth continued, and the miasma which spread from the sloughs and large marshes in the immediate vicinity of Minnesota City rendered that locality particularly unhealthy. Serious bilious diseases afflicted the settlers, who, coming for the most part from the eastern states, were unacclimated and lacked the protection of suitable dwellings. A large majority of them were incompetent and unsuited for pioneer life.

Domestic treatment and patent medicines were generally depended upon. One of the colonists was attacked with intermittent fever, for which a neighbor recommended quinine. A friend who had business in Saint Paul was asked to procure a pound or two. Upon his return, the astounded patient received but four ounces and a bill for twenty dollars. After strongly condemning the Saint Paul druggist, he called in his neighbor who had prescribed the medicine. The explanation followed: It was a dram or two he had recommended instead of a pound or two. The sick man, relating the incident, said: "I knew nothing about the stuff. Anyway, it was no serious mistake because it was needed in the settlement and the neighbors took it off my hands without any pecuniary loss."

Every settler in that colony was said to have suffered from an attack of fever and ague. Only fourteen deaths occurred there in 1852, however, and a majority of these were juvenile cases.

A case of what was supposed to be cholera was reported in May, 1852. William Christie came down from Minnesota City, or Rollingstone as it was then called, to meet a new settler who was to arrive at Wabasha Prairie. On his way he forded the back slough, and without changing his wet clothing lay down to rest, complaining of not feeling well. He was taken with cholera and died before morning. Immediately following this, another death occurred at Minnesota City, which was also said to be cholera.

It was estimated by an early settler that the population within the present limits of Winona County on the first day of January, 1853, was about 350. Drs. Bentley, Balcombe, and Childs had come to the county before the close of 1852, so the rapidly increasing population was not entirely without medical attention at this time. However, Childs probably never practiced his profession, but engaged in the mercantile business for a year or two at Wabasha

Prairie. Balcombe came on an exploring trip in 1852 and again in 1853. The next year he built a house on his claim and lived there until his death in 1856. Apparently Balcombe had no intention of establishing a medical practice at Wabasha Prairie. Although poor health prevented him from being prominent, he took an active interest in the development of that part of the territory and in the political questions of his day. A contemporary said that he was a man of the most extended information of any among the early settlers and one of the first and best of the early citizens.

Dr. Bentley spent the winter of 1852-1853 at Minnesota City, then made his permanent residence at the town that is now Utica. There he became postmaster and justice of the peace. The postmaster's job entailed putting the mail in an old trunk where it was available to whoever wished to sort it out; and being justice of the peace was not much more exacting. A marriage ceremony performed by Bentley in 1857 was typical of his easy way of doing business. The principals were ordered to stand up and join hands, then the doctor said, "By virtue of the authority vested in me by the territory of Minnesota, I pronounce you man and wife." Considering the lightness of his other duties, there must have been ample time for him to practice his profession, but it is doubtful whether he made the most of it.

The first permanent, practicing physician in Winona County was Dr. James M. Cole, who arrived in Winona in 1854, and remained there forty years. He had finished his medical education eight years before in New York state. He was always a respected family physician and a substantial citizen, and served as a member of the school board, as city and county physician, and as a member of the legislature. He was also a prominent Mason and Odd Fellow.

Dr. Cole ran a livery stable during the depression of 1857, but he gave it up after four years. Accompanying his new card which appeared in 1862, the editor of the local paper published an article which reads as follows:

> "The attention of persons in need of medical attendance is directed to the card of Dr. J. M. Cole elsewhere. He is a pioneer of this place, and in an extended practice and strict attention to his profession has been able to learn the peculiarities of this climate and the wants of invalids. Volunteers' families will find his name among physicians who offer gratuitous service."

The year 1855 marked the beginning of the period of Winona's growth. During the summer several newspapers began publication in Winona City, and printed the cards of newly arrived physicians, notably those of Norton, Chambers, and Farrington. Dr. J. C. Norton, physician and surgeon, justice of the peace, land surveyor, and coroner, resided at Homer.

Farrington, who settled at Winona City, anounced in his card that he was prepared to attend to all calls within the village or country and also that he would pay particular attention to diseases of the eye. However, Farrington stopped practicing. After engaging in the hardware and later the drug business, he again took up his profession at Huron, Dakota Territory, in 1880.

In the year 1856, after the territory lying west of Winona had been opened to settlement, Winona grew considerably. Nine physicians practiced there at the time. The combination of the drug business with the practice of medicine was frequently found to be profitable. Dr. Chambers engaged in wholesale and retail drugs from the time of his arrival, and so did Dr. D. Ferris, who came in 1856. A newspaper article of that year gave a good description of the druggist's stock.

> "We called on our friend Dr. Chambers the other day, and he laid before us a dish of fresh honey, the first we have seen in Minnesota, and the most palatable we ever tasted. Those who are fond of luxuries will do well to call and get a portion before the rapidly disappearing stock is exhausted. The Doctor has a most extensive stock of Drugs and Medicines—rare fancy articles for the toilettes of the sex divine, and some splendid Manilla and Spanish Cigars for the lovers of the grateful weed."

Evidently the drug business has seen considerably less change in the last century than has the practice of medicine.

Those physicians who thus established themselves in business were infinitely more fortunate than those who met the depression of 1857 with only their practice as a means of livelihood. Although the locality was growing rapidly, nearly every physician was forced to engage in some other business. Dr. Farrington started a hardware establishment; Drs. Moore and Sheardown, arrivals of 1856, became a jeweler and a baker, respectively, and Dr. Cole, as has been remarked, ran a livery stable.

These conditions continued for nearly three years. Eight or ten new physicians came to the county early in 1857, but few had the courage to come in fifty-eight and fifty-nine. During this time, patent medicines and guides to longevity were rife, although it is impossible to say how extensively they were used. Neighbors recommended cures for one another such as cranberry poultice for erysipelas, strawberry leaves for diarrhea, or horse-radish applied to the wrist over the pulse for immediate cure of toothache.

Reports often came in of typhoid and scarlet fever in surrounding localities. At the town of Winona, however, there were but four deaths in the year 1858 among a population of about 3,500. Public health and safety were early considered in Winona, which was an unusually well ordered town from the start. Drs. J. D. Ford, C. B. Dayton, and D. C. Patterson were appointed members of the board of health, which was an active organization in 1858. A year later, the following notice was circulated:

> "The undersigned, Overseer of the Poor in Winona County, will receive proposals from Physicians for medical attendance upon the poor of said county during the twelve months next ensuing. The lowest responsible bidder will be entitled to the office of County Physician.
>
> GEORGE W. PAYNE."

The physicians were among the civic leaders in the early days. Dr. John D. Ford especially may be mentioned. Ford was a graduate of Dartmouth College and of the Jefferson Medical College (1844). Soon afterward he commenced the practice of medicine at Norwich, Connecticut, where he attained a high position in his profession. After practicing successfully for about eleven years, he sought a climate more congenial to his health, and in 1856 came to Winona. For a time he resumed his practice, which became very extensive. Almost immediately he showed interest in civic affairs and was elected alderman of the ward early in 1857. The same year he became chairman of the trustees of the school districts, and later a director of the state normal school, and one of the county school examiners. He might well be called a pioneer in the interest of the common school system of the city and state.

Not long after his arrival in Winona, Dr. Ford became the agent of several eastern insurance companies, and gave up the steady practice of his profession, which was difficult for a man in poor health. Through his death, which came November 5, 1867, from typhoid pneumonia, the community lost one of its most valuable members.

At the county Democratic and Republican conventions, physicians were in constant attendance, and they were very often appointed to public office. Dr. S. B. Sheardown, among these, came to Winona City in January, 1856, and became a partner of Dr. Cole. Later, after serving in the Civil War, he took up his residence at Stockton. His interest in the development of the village and in its religious and educational growth well qualified him for public office. Twice he was elected to the lower house of the State Legislature and once to the Senate. At various times Dr. Sheardown had an office in Winona City. He also made the first attempt to establish a hospital there. However, his Stockton practice was very heavy and constantly called him back.

Dr. Sheardown was one of the charter members and the first president of the Winona County Medical Society, which was organized in April, 1869. Twice again he served in the same capacity. He died in 1889 while holding this office. At that time he was also treasurer of the State Medical Society, an office he had held for twenty years.

Dr. J. Q. A. Vale of Homer came to the county a few months later than Sheardown. He also was an active Republican and held many public offices, among them that of town clerk and state senator. He was a charter member of the Winona County Medical Society and in 1870 was elected to the Minnesota State Medical Society.

After 1860 the economic depression was alleviated and many physicians supported themselves by their practice alone. There were doctors at Homer, Minnesota City, Beaver, Utica, Rollingstone, and probably elsewhere; but Winona physicians were often called out of town to attend patients in the county. It was a business convenience for two doctors to form a partnership, keeping an office together and having accounts in common. In this way one would always be available in town while the other attended country patients.

The Civil War called many physicians into service in the early sixties. Dr. Dixon of Saratoga, and Drs. Wedel, Sheardown, Mead, and Trenkler of Winona all gained practical experience in the army and returned to practice again after their military service.

Minor epidemics visited the locality in these years. Diphtheria was reported across the river in 1861; measles was prevalent in 1862, and in the same year several deaths from scarlet fever were reported. The following note appeared in the press in 1863:

> "That dread-inspiring disease, diphtheria, is said to exist in town to a considerable extent, and several cases have of late resulted fatally. The disease is not a new one. It has been known to the medical science for upwards of 200 years. If a case gets under headway, it cannot be easily overcome by any medical application; and a preventative has been used with good result in places where the disease was prevalent. The German physicians advise the gargling of the throat, every morning before eating and every evening before retiring, with the brine of Holland herring, which can be procured at almost any German grocery. This as a preventative to the spread of disease is recommended on high authority, and in the present emergency it might be well for every parent to take this simple precaution, especially with children going to school."

One may suspect the newspaper editor of having just received the commission for a large advertisement from the German grocery. Nevertheless, diphtheria continued to prevail throughout the county; one family lost six children in the space of thirty-six hours. Occasional cases of typhoid in the county were reported from year to year, but the disease did not become epidemic in any particular locality. Sickness usually occurred at Winona in the month of July, and was

popularly thought to be caused by the excessive warm weather and the imprudence of the people in eating green vegetables.

Unusually warm weather nearly always produced sickness in Winona. The fall of 1865 saw much disease of a bilious character which yielded easily to medical treatment. Spotted fever, a particularly fatal complaint, was epidemic at the same time and several deaths occurred at St. Charles.

Dr. Franklin Staples, who arrived early in the sixties and shared an office with Dr. Ford, was one of the best liked physicians in Winona, and was well known throughout the county. Especially were his services sought in cases of injury where skill in surgery was necessary. As a man of culture and ability, Dr. Staples was an asset to the community. A lecture given by him under the auspices of the Young Men's Literary Society was entitled "The Old Earth." The breadth of subject doubtless presented few difficulties to him for he had served for five years as the head of a boys' school and later as assistant professor at the Maine Medical College. As early as 1865, he was given the position of superintendent of city schools, but he resigned from the office on account of pressing professional duties.

The practice of medicine reached two extremes at this time. There were the well educated men, and those who had gained surgical skill and knowledge in the war; on the other hand there was the worst kind of quackery. Eye and ear doctors with sure cures, many testimonials, and much advertising were numerous in the sixties. Many of the early druggists used the title of "doctor" and probably dispensed as much advice as medicines. There were about thirty physicians in Winona City in 1865 and twice as many in the county as a whole. Patronage was not lacking, for the number of incoming settlers increased even more rapidly in proportion than the doctors.

Early in 1866 the first medical society organized in Southern Minnesota was established. The physicians of Winona City held a meeting at the office of Dr. Staples and organized themselves into an association called the Medical Society of Winona. Regulations were adopted expressing the objects of the society as follows:

1. Improvement in the science and art of medicine.
2. The promotion of regular and honorable practice in the profession.
3. The maintenance of friendly relations and intercourse among members of the society, and with the regular medical profession at large.
4. The maintenance of suitable and uniform prices for professional services, by adherence to a fee table agreed upon by the society.

The members of the society were Drs. Cole, Hebbard, Staples, and Wedel. Dr. Cole was elected president and Dr. Staples secretary and treasurer for the ensuing year. After organization, the society adopted a set of resolutions and by-laws embodying a fee table, and also agreed to be governed by the code of ethics of the American Medical Association.

Cholera claimed many lives in Minnesota in the year 1866. Fortunately Winona was more scared than hurt. Reports came daily of deaths in New York, Galveston, New Orleans, Saint Louis, and later from just below Saint Paul, but the year ended with no fatalities reported in the town. Early in the year, health officials had made a tour of inspection in the city to find out whether the property holders had complied with the city ordinances in cleaning up their premises, whitewashing cellars, disinfecting drains and so forth. Later, editorial comment demanded further action on the part of the board of health. Special reference was made to a small pond in the neighborhood, and it was argued

that the green scum was very dangerous and "apt to infect the whole community with cholera." A campaign was even effected against rats and the people wholeheartedly rid the city of as much vermin as could be lured into a feed store. Many patent medicines and home remedies were recommended for prevention and cure. Drs. Sheardown and Cole recommended Benson's Rhubarb Cordial to be used in cases of diarrhea or incipient cases of cholera.

A new and more lasting organization of the Winona County Medical Society was effected in April, 1869. Fourteen physicians are listed as charter members: C. S. Sheldon, J. M. Cole, J. B. McGaughy, W. H. H. Richardson, F. Staples, W. J. Youmans, S. B. Sheardown, J. B. Tamblin, H. H. Guthrie, J. Q. A. Vale, A. B. Stuart, Columbus G. Slagel, C. N. Clark, and J. F. Tourtellotte. Of these, the last three were not elected until July. The members of the society were the outstanding physicians of the county. Dr. A. B. Stuart was for many years identified with the history of medicine in Winona. Before coming to this city, he had attended the Lewisburg University and the Berkshire Medical College where he received his M.D. degree. After distinguished service in the Civil War, he graduated from the Bellevue Hospital Medical College and then took up his practice in Winona. While engaged in general practice, he gave especial attention to surgery and had charge of a number of notable cases. He held offices in the Winona County Medical Society, in the State Medical Society, and also in the American Medical Association. In 1872 Dr. Stuart was instrumental in securing the establishment of the Minnesota State Board of Health and became its first president. During the same year, he was elected teacher of surgery in the Winona Preparatory Medical School and soon after held the office of president of that institution. Dr. Stuart practiced until 1877 in Winona and then moved to California in an attempt to improve his health.

Dr. James Brown McGaughey received his early education in private and public schools and in the McDonough Presbyterian College in Illinois. When a youth of nineteen, he enlisted in the army. During his many varied war experiences, he found time to follow his bent for medical studies, and his reading was guided by his brother-in-law, Dr. A. B. Stuart. After the war, he attended Berkshire Medical College at Pittsfield, Massachusetts, and subsequently completed his course at the University of Michigan in 1869. Soon afterward he came to Winona, and entered upon forty-one years of continuous practice of his profession. Dr. McGaughey became a successful physician and surgeon, and was reputed an authoritative diagnostician. His work was characteristically progressive. He made frequent trips to the best hospital clinics and was a tireless reader of professional literature. He was active in state, local and national medical societies and helped to incorporate the Winona Medical School.

Dr. W. J. Youmans, who later edited the *Popular Science Monthly*, practiced in Winona City during the years 1869 and 1870. He had graduated from the medical department of the University of New York, taking special instruction under Professor Draper. Soon afterward he went to England to pursue physiological studies in the laboratory of Prof. Thomas H. Huxley. While there he and Professor Huxley jointly published *The Elements of Physiology and Hygiene*, the treatise on hygiene being Prof. Youmans' work. Returning to America, Dr. Youmans soon came to Winona, where his brothers had a drug business.

(To be continued in May issue.)

President's Letter

THE annual meeting of the Minnesota State Medical Association will be held in Rochester on April 21, 22, and 23. The entire program for the first day will be presented by the Rochester doctors together with a paper on "Arthritis" by Dr. Cecil of New York as their guest. The programs for Tuesday and Wednesday will be by physicians from various parts of the state together with guest speakers of national reputation from other states. These guest speakers will include such men as Fred L. Adair of Chicago on "Obstetrics," John O. Bower of Philadelphia on "Appendicitis," Harry Mock of Chicago on "Head Injuries," A. J. Lanza of New York on "Pneumoconiosis," Norman Jolliffe on "Nutritional Deficiencies," Bernard Nichols of Cleveland on "Radiology," and others; Paul Magnuson of Chicago will bring the fracture symposium to a close with a paper on "Fractures of the Neck of the Femur" (femoral neck).

An outstanding feature and one that is proving very popular in other states is the Round Table discussions; there will be ten of these luncheons each day, those on Monday being conducted by the Rochester group, and on Tuesday and Wednesday by the guest speakers as well as by leaders on various subjects in our own state. At the annual meeting in Michigan and also in Wisconsin last year those who did not register in advance could not get in for lack of space. Each member will be given a card to fill out designating his choice for these Round Table luncheons and it will be wise to register your choice in advance as the accommodations will be arranged according to the applications filed.

The meeting this year will be held in the new Auditorium in Rochester. (Ours will be the first large meeting to use this beautiful new building which was presented to Rochester by the Mayo Brothers.) This building is commodious, well arranged, and but a short walk from the hotels. There will be ample space for the fine scientific exhibits and also for the advertising displays; the cinema films on various scientific subjects will be shown in an adjacent room.

Keep up-to-date by attending our annual meeting. The latest information on a large number of subjects will be given there.

BERTRAM S. ADAMS, President
Minnesota State Medical Association.

EDITORIAL

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Annual Subscription—$3.00 Single Copies—$0.40

Foreign Subscriptions—$3.50

Address all communications to Minnesota Medicine, 2642 University Avenue, Saint Paul, or Suite 308, National Bldg., Minneapolis. Telephone: Nestor 2641.

BUSINESS MANAGER
J. R. BRUCE

Volume 23 APRIL, 1940 Number 4

ANNUAL STATE MEETING

THE time has come for another annual state medical meeting, the program of which appears in this issue. The three-day meeting takes place Monday, Tuesday and Wednesday, April 22, 23 and 24, 1940, at Rochester, Minnesota.

The Scientific Committee, composed of President Adams, Past President Earl, Executive Secretary Rossell and Dr. W. A. O'Brien, have arranged an attractive program, including a number of out-of-state visitors. Monday will be devoted to a program of addresses and Round Table discussions by Mayo Clinic dictors with the Mayo Foundation lecture by Dr. Russell L. Cecil of New York in the afternoon.

Entertainment in the form of open house will be provided the visitors at the Mayo Civic Auditorium, Monday evening, by the Mayo Clinic and the Olmsted - Houston - Fillmore - Dodge County Medical Society. This is the first time a medical meeting will have been held in the new auditorium presented to the city of Rochester by the Mayo brothers.

The banquet, Tuesday night, will be held at the Rochester State Hospital, and will be addressed by Governor Stassen and Mr. B. H. Ridder of the *Saint Paul Pioneer Press and Dispatch.*

Enough said—except for the golf tournament to be held Sunday, April 21, at the Rochester Country Club, open to all state association members.

These same dates are also the occasion for the annual meeting of the Women's Auxiliary of the State Medical Association. Mrs. A. C. Baker, of Fergus Falls, president, announces that Mrs. Rollo K. Packard, Chicago, president of the National Auxiliary, will attend the meeting. A full program for visiting auxiliary members has been provided by the local auxiliary group.

A perusal of the program will convince lethargic members that the addresses, scientific cinemas and exhibits, and the opportunity to renew old acquaintances and to make new ones, will be well worth the sacrifice of three days away from the grind.

CHILDREN OF DIABETIC MOTHERS

OBSTETRICS in diabetic mothers has not become an easier problem since the development of insulin because there are more pregnancies in diabetic women who often were sterile in pre-insulin times, or died before they were able to have any children.

Although it has been known for a long time that the children of diabetic mothers are beset by grave dangers—ante partum as well as post

partum—one has the impression that very little thought is given this problem and that no definite plans are made as to the care of these infants during the immediate post partum period.

For years we used to think that a diabetic woman improves greatly during pregnancy, apparently receiving some insulin from the fetus. Although there have been several cases that needed much less insulin during pregnancy than before, it cannot be said that *most* women show such an improvement. It is true that very often there is a very normal pregnancy up to the sixth month, but after that the obstetrician has a right to expect the mother to become a serious problem. Edema, albuminuria, or rise of blood pressure may make their appearance at any time with resulting danger to mother and child.

The child of a diabetic mother may present the following serious problems: high mortality, gigantism, congenital defects, hypoglycemia.

The high mortality is due mainly to stillbirths and asphyxia neonatorum. This has been known for a long time, but the reason for this has not been clear. In a relatively recent article (1939), Priscilla White explains the frequent occurrence of these accidents by extra-diabetic factors—based on her own investigations, as well as those of Murphy (1933) and Smith and Smith (1935, 1936, 1937). More than 30 per cent of diabetic mothers develop pre-eclamptic toxemias, and it has been established that an "excess of serum prolan precedes, predicts and perhaps causes" these toxemias. It seems that the high percentage of stillbirths is not directly related to the diabetes as such, or to diabetic acidosis, but shows definite relationship to the pre-eclamptic toxemias. Patients with normal serum prolan values developed no pre-eclamptic toxemias and there were no miscarriages; those with supernormal values had pre-eclamptic toxemias or miscarried. As proof of this theory she was able to show that patients with supernormal values of prolan responded to replacement estrin and progestin therapy. None of nine patients treated in this manner developed a progressive toxemia, normal prolan values were restored, and none had a miscarriage. All fetal and neonatal deaths in her series of thirty-four cases, except one, occurred in women with abnormally increased prolan values. White concludes that the rise of prolan indicates an abnormal balance, and the placenta is destroyed as a defensive mechanism. Incidentally, of course, the fetus dies and miscarriage is the result. Although the series of cases is relatively small, the figures seem to be significant: fetal or neonatal mortality in cases with high serum prolan without specific treatment, 50 per cent; in cases with normal prolan, 8 per cent; and in those with high prolan but specific treatment, 11 per cent (1 of 9 cases; this mother received definitely less and apparently insufficient replacement treatment).

Gigantism in children of diabetic mothers has been reported for about half a century, and has usually been attributed to the hyperglycemia of the mother. This theory has been adhered to up to now. White, however, cannot find any correlation between the size of the infant and the control of the mother's diabetes. She suspects that this too may have its cause in the abnormal hormone balance, because she found the larger infants usually in the cases with high serum prolan, who had no specific treatment. Snyder (1934) and Hoopes (1934) were able to produce a similar picture in rats and rabbits by means of prolan injections: miscarriages, stillbirths, oversized fetus, etc. Statistics show that 18 per cent of the children of diabetic mothers weighed at birth over 10 pounds (Skipper, 1933), and that 60 per cent weighed over 8 pounds (White, 1935). All ten cases of hypertrophy and hyperplasia of the pancreas, collected by Rascoff et al. (1938), weighed 9 pounds or more.

The prevalence of congenital defects in infants of diabetic mothers is not readily noticeable because of the relatively small number of diabetic mothers, but when larger series of cases are examined, one is surprised to find that the incidence is about twice that of control cases (Skipper, 1933; Joslin, 1937). As diabetes apparently is genetic in origin, there may be some relation of this factor with the higher incidence of congenital defects (Joslin).

Hypoglycemia in the newborn of a diabetic mother is a grave condition, and may easily lead to death. In fatal cases, hyperplasia and hypertrophy of the Langerhans islets have been demonstrated in a number of cases. The first case to be fully published was that of Dubreul and Anderodias (1920). In 1938 Rascoff, Beilby and Jacobi collected ten cases—their own and those published between 1920 and 1936. The

islet tissue was found greatly increased; it varied from four to six times to twenty to thirty times that of a normal pancreas. Other microscopical changes were peri-insular edema and fibrosis and eosinophilic infiltration of the stroma between islets and acini and sometimes of the stroma within the islets. Of other organs, the adrenals were found affected in two cases (hemorrhage and necrosis), and the liver was enlarged in one case. All mothers suffered from severe, often uncontrolled, diabetes, except one who was found to have a latent diabetes. That there is no definite correlation between the blood sugar level and the insular size was shown very recently by Helvig (1940). It is logical to assume that the etiologic factor for this hypertrophy is the hyperglycemic state of the mother.

The symptomatology is not always very definite. Often the dominant symptoms are twitching and convulsions, but these are not always present. At other times the dominant symptom is cyanosis, as was the case in Randall and Rynearson's group of seven children of diabetic mothers (1936). Among these seven, only one showed twitching and convulsions, and that child had a normal blood sugar. Occasionally there may be no symptoms with a blood sugar as low as 45 mg. (Skipper).

Hypoglycemia may be due to adrenal hemorrhage alone. Of course it is most difficult to differentiate it from the hypoglycemia due to hyperinsulinism, especially if the mother has diabetes. Both may exhibit acute onset with symptoms of shock, followed by collapse and death within twenty-four hours. Usually, however, the symptoms of adrenal hemorrhage do not appear until thirty-six to seventy-two hours post partum, and there is usually high fever and very rapid, shallow respiration. The damage to the adrenal gland in itself seems to make the organism more sensitive to insulin, and the severest picture can be expected when hyperinsulinism and adrenal damage occur in the same infant.

It is also not an easy task to differentiate hypoglycemia from other pathologic conditions of the newborn—asphyxia, cerebral hemorrhage, etc. It seems a good rule to investigate the blood sugar when the child is large and difficult to resuscitate by aspiration and inhalation of carbon dioxide and oxygen. Cerebral conditions usually respond slowly. There is marked depression of the sensorium and the reflexes, and there may be a characteristic cerebral cry or whine. Hypoglycemia responds more rapidly and the child has a good cry once respiration is established, and there is a good sucking reflex until coma supervenes.

The treatment consists of rapid supply of dextrose by various routes until the blood sugar rises to a fairly normal level, and all dangerous symptoms disappear. Higgons (1935) used 100 c.c. of a 5 per cent glucose solution subcutaneously, and some physicians used blood from the mother because of the high sugar content. Randall and Rynearson (1936) were able to deliver successfully and guide through the newborn period eight successive children born to diabetic mothers. The treatment varied somewhat with every case, and was guided by the symptoms, the blood sugar, and the ability to retain feedings by mouth. First, the infant should receive all the treatment necessary to establish normal respiration—aspiration, oxygen with carbon dioxide, etc. The length of time the child should be kept in an oxygen-carbon dioxide or oxygen atmosphere depends on the child's respiration. Ten per cent dextrose is administered intramuscularly (5 c.c. in each buttock). A blood sugar determination should be carried out as soon as possible, and further intramuscular injections may be given at intervals of one or more hours if indicated.

Feedings in form of 10 to 20 per cent dextrose solution can be started after two to four hours and repeated every one to two hours for the first day, or even longer. The oral treatment with dextrose solution and the time when a formula with a high carbohydrate content should be started depends on whether or not the infant is able to retain feedings.

Closest observation is essential for at least two to three days in cases that show definite symptoms, particularly as we are not able to say how long there is danger from a complicating hypoglycemia. Repeated blood sugar determinations by a micro-method should be done and the treatment continued until all symptoms have disappeared and the blood sugar level is no longer dangerously low.

It is of the greatest importance to make plans for the newborn of any diabetic mother *before the child is born.* The laboratory should be

ready to make a sugar test on the cord blood or the child, and if this is not possible, dextrose should be administered as a precautionary measure.

Of even greater importance is the obstetrical problem during the last few months of pregnancy. The diabetes should be controlled by all means. A slight tendency to show less sugar for a while should not lead to a radical reduction or even cessation of insulin, because of the undue strain upon the fetal pancreas and the possibility of a hypertrophy under such conditions. Hormone treatment to restore hormonal balance probably will be treatment for the prevention of toxemias and consecutive miscarriage or intrauterine death. The same type of treatment may reduce the number of over-sized children. But until such treatment is put on a practical basis, White's contention (1935) that "the premature delivery of the fully developed though chronologically premature infant of the diabetic mother by cesarean section is the obstetrician's successful answer to the challenge" should be kept in mind. Randall and Rynearson, who stress the same idea, recommend the thirty-sixth to thirty-seventh week of pregnancy for this purpose.

ROBERT ROSENTHAL, M.D.

CABOT CRITICIZES AGAIN

THE article entitled "Give the Patient a Break" by Dr. Hugh Cabot, which appeared in the *American Magazine* for April, doubtless caused resentment in the minds of most physicians who happened to read it. It savors too much of washing dirty linen in public, and certainly is an addition to the present-day propaganda to discredit not only the present system of private practice but also the profession in general.

The rank and file of the profession will concur with the author in his attitude toward certain medical practices which he decries. Fee-splitting is one. Exorbitant fees in respect to the patient's ability to pay is another. This is a relative matter, however, for a fee of $100 may be excessive for one patient and one for $10,000 may conceivably be too small for valuable service rendered to one who pays a million dollar income tax. An excessive fee, whether it be $100 or $10,000, if it is more than the patient should be charged, is condemned by the majority of doctors. The bad practice of overcharging is not a valid reason for condemning the fee system.

The author thinks the fee system all wrong, and cites his own experience in charging large fees as proof. If in his own early experience he overcharged, his self-condemnation is justified—not the system.

Group practice is the thing, according to the author. But he is not sure whether the general practitioner can be dispensed with. His contention that the specialist is necessary, is admitted by all. Even his contention that a specialist may see only his specialty, is admitted. This depends, however, on his professional attainments, not on his being a specialist. Others believe in the advantages of medical groups in the practice of medicine. Whether such groups actually lower the cost of care to the patient, is open to argument. The independent doctor can still obtain consultation without difficulty. That the general practitioner can and does care for most medical needs is a fact.

The evils associated with self-styled specialism have long been recognized by the profession and much progress has been made in remedying them. Lack of standards for determining qualifications for specialists were lacking in former days, but have been established by the profession itself. There is no present need for a member of the profession shouting from the housetops about a situation which is being remedied and which never was a major evil.

The author's main cause for disgruntlement is what he claims to be the opposition of medical societies to the prepayment plan of providing for medical care. Is this an accurate statement?

The American Medical Association has given much thought to the whole subject of methods of payment for medical service and has been consistent in its attitude.

In 1934 the House of Delegates took the stand that medical service should be paid for by the patient according to his income status and medical service should have no connection with cash benefits.

In 1935 the same body reaffirmed its opposition to compulsory sickness insurance, whether conducted by a governmental unit or an industrial body. It encouraged medical organizations

to establish plans for providing medical care by voluntary budgeting to meet costs of illness. It also stated that there is nothing inherently good or bad from a medical point of view in different methods of collecting medical fees, providing they are kept separate from any control of practice.

The American Medical Association has been wrongly accused at times of opposing hospital group insurance. Only unsound features of certain plans were criticized.

In 1938 the House of Delegates advocated the principle of cash benefits to members of insurance groups for medical or hospital service in order that the relationship of the patient to the physician or hospital be not disturbed.

This record shows that the national organization is not opposed to prepayment plans *per se*, but is strongly opposed to plans that disturb the fundamental requirement of free choice of physician, place the control of medical care in other hands than the medical profession, and, by insufficient financing or otherwise, result in inferior medical care.

The medical profession has been striving for years, and is today more than ever trying to solve financial problems associated with medical practice, just as more thought is being expended today on economic problems in general. It seems at least poor taste for Dr. Cabot to discredit publicly his own profession in what is doubtless an altruistic attempt on his part to point out a way to provide better medical care at more reasonable cost.

AUTOMOBILE ACCIDENTS

LAST year 32,100 human beings were killed and 1,210,200 were injured, many severely, as a result of automobile accidents. The fatalities are about the same as in 1938 but the number of injured has increased by some 64,000.

A parade with 32,100 people in line is a big parade. If this number of people were killed at one time and in the same place, the newspapers and radio would make headline material. If this number were lost in one battle the toll would make a deep impression. Scattered throughout the land and throughout the year, as these accidents are, one is little impressed by the figure unless someone near and dear to him has been the victim. Even an injury from an automobile accident makes some impression.

What are we going to do about it? Fatalities from other types of accidents have been greatly reduced in recent years, but the toll for automobile accidents remains about the same high figure.

The problem is much the same as in the care of a disease exacting a large death toll. Find the cause and a campaign of education will bring certain results.

Insurance companies have been active in publicizing the subject of automobile accidents. We doubt whether a reduction in such accidents would result in any pecuniary benefit to insurance companies. But we do know that such a reduction in accidents would mean money in the pockets of all who now carry such insurance. The greater the hazard, the more individuals feel compelled to carry insurance, but the insurance companies do not pay for the deaths, injuries and destruction to property. We do. With fewer accidents, fewer policies would be written, even though the rates were lower.

The Travelers Insurance Company of Hartford has just issued a booklet entitled "Smash Hits," which is an analysis of the automobile accidents of 1939. We hasten to do our bit in calling attention to some of the causes of accidents incident to the driving of automobiles. Being both a pedestrian and driver at times, we will not take sides as to who is most to blame. About the same number of both are killed each year.

Haste and carelessness are the causes of most accidents. Lack of good manners is as often as not the cause of accidents.

More than half the fatalities occur after dark when there is only a quarter of the traffic as in daylight. Too, half of the fatalities among pedestrians occur in those over sixty-five years of age. The conclusion is obvious that drivers do not slow down sufficiently after dark. Loss of keenness of the senses and agility in older individuals make this group particularly susceptible to automobile accidents.

Attention should not be centered on haste and carelessness alone in an effort to remedy the present situation. A hundred and one additional steps can be taken to minimize the possibility of accidents. Speed laws, traffic regulations, rules of the road, periodic checking of brakes, severe

punishment for drunken driving—all merit attention. As in many similar problems, education and an aroused public opinion will do much to reduce the high price we pay for a great convenience.

In Memoriam

Louis Guinard

1864-1939

The death of Guinard, September 5, 1939, just when France was being mobilized for the war, brought lasting grief to thousands in spite of their preoccupation with national affairs. Among them were physicians who treated tuberculosis, his friends and pupils, as well as the patients whom he had brought back to health. In the hearts of the French people he had a place similar to that filled by Trudeau in America. His entire life was devoted to one great task, the alleviation of the suffering caused by tuberculosis. The fact that France has produced such men gives us hope for the future of the world at a time when violence is rampant and the world is on fire.

The first sanatorium in France, Mangini at Hauteville, was opened by his friend Dumarest in 1896. Bligny, in the valley of the Chevreuse, admitted its first patients in August, 1903, with Guinard as director. It was for the common people of Paris and had one hundred and twenty beds. He remained there until his death. He had no other ambition than the health of his patients and the success of the institution. Drolet and the writer visited him there one pleasant Sunday in 1917. We were invited to dinner and sat with the patients as he always did. Most of the patients were soldiers. Afterward we saw them reclining in the liegehallen or long porches. We met Mme. Guinard and finally bade the doctor good-bye at the front gate where he had come, not only to see us off but to wish God-speed to the many relatives and friends of patients who were visitors that afternoon.

Dr. Marcley visited Bligny later and became a close friend of the Guinards. To all of us his life has been an inspiration.

A. T. Laird.

Leonard J. Nilles

1902-1940

Dr. Leonard John Nilles of Rollingstone, Minnesota, died at the Winona General Hospital on February 2, 1940, of rheumatic heart disease.

Dr. Nilles was born at Rollingstone, Minnesota, on July 24, 1902. He received his grade school education in Holy Trinity Parochial School at Rollingstone, following which he attended Holy Trinity High School, from which he was graduated. His pre-medical training was received at St. Mary's College at Winona, Minnesota. In 1931 he enrolled in the University of Minnesota School of Medicine, from which he graduated in June, 1935. He spent a year of interneship at St. Mary's Hospital in Minneapolis, following which he entered general practice at Rollingstone, Minnesota, where he continued to the time of his death.

On June 18, 1935, he was married to Miss Mary Bochnak of Minneapolis. He is survived by his wife, a brother, Arnold, and two sisters, Hattie and Viola.

Dr. Nilles was a member of the American Medical Association, Minnesota State Medical Association, Winona County Medical Society and the Southern Minnesota Medical Association. He was a member of the Knights of Columbus, Council 639, of Winona, Minnesota, St. Nicholas Society of Rollingstone and the Rollingstone Civic Club, of which he was president. He was known as a sincere, honest and conscientious practitioner and was trusted and regarded highly by the people of his community and his fellow practitioners.

Fred H. Stangl

1893-1940

Dr. Fred H. Stangl died March 19, 1940, following a four weeks' illness of subacute bacterial endocarditis. He died in the St. Cloud Hospital where he was a member of the staff and also pathologist.

Doctor Stangl graduated from the University of Chicago and Rush Medical College in 1918 and served his internship in the Cook County Hospital, following which, he served as pathologist for the Cook County Hospital for three years. In 1922 he came to St. Cloud where he has been in practice since that time.

He was a member of the Nu Sigma Nu Fraternity. During the World War he served as consultant to the Naval Training Station in Chicago.

During his practice he was a member of the Lewis-Stangl Clinic, St. Cloud, where he was associated with Dr. C. B. Lewis, Dr. W. L. Freeman and his brother, Dr. P. E. Stangl.

He was a member of the Stearns-Benton County Medical Society, Minnesota State Medical Association, a Fellow in the American Medical Association and an active member of the American Society of Clinical Pathologists. He made various contributions to literature on influenza during the 1918-1920 epidemic and on the growth of the tetanus bacilli.

Correction.—Attention is called to an error in the section on History of Medicine in Hennepin County, which appeared on page 181 of the March issue. In the list of Commissioners of Health for the City of Minneapolis under the year 1919, statement was made that Dr. H. M. Guilford died. The information in parentheses should have read: *(Dr. H. M. Guilford resigned December 15, 1919. Dr. Elizabeth Woodworth took his place temporarily until his successor, Dr. F. E. Harrington, took office January 1, 1920.)* According to latest reports Dr. Guilford is living in Madison, Wisconsin, where he is associated with the State Board of Health.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
W. F. Braasch, M.D., Chairman

COUNTY OFFICERS MEET

County officers met in discussion groups according to their interests this year instead of according to district groupings.

The result was some lively discussions of current economic and welfare problems of Minnesota, most of which were summarized neatly and provocatively by discussion leaders as follows:

Medical Relief

Dr. W. A. Coventry, Chairman, Committee on Low Income and Indigent Problems: Our relationship with Director Walter Finke of the Division of Social Welfare is good. With the aid of his medical advisory committee, I believe he will eventually straighten out the relief tangle in Minnesota and insist upon sound, uniform policies all over the state.

Tough Committee

In the meantime, you will be interested in the plan worked out in one county as a substitute for a county doctor plan. This plan was just outlined for us by one of the men who has helped to engineer it. In this county, the doctors arrived at an agreement with the county welfare board whereby all the doctors in the county were to take care of welfare patients for a sum that would not exceed the amount paid before to two county doctors and one township doctor, the first year. They established a fee schedule and a tough working committee of doctors to audit medical bills and supervise the service. The doctors got 60 per cent of normal fees for medical work, 40 per cent of normal fees for surgical work. Physicians were required to itemize their bills. If the record was not complete, the bill was cut. Hospital cases were taken care of in their own community as far as possible. A strenuous effort was made to get the disabled back to work. Last year, the cost to the county for caring for seventy-five people locally was $2,650.00, while the cost of caring for 18 cases at the University hospitals was $1,662.00.

When a group of doctors can agree on a workable plan and see that it is put into effect as these men have done it is quite a hopeful sign.

There were many hopeful findings in the return on the questionnaire concerning medical relief plans sent out all over the state last month under the auspices of the Committee on Low Income and Indigent Problems.

Drift to Free Choice

For instance, the drift is definitely to free choice of physician in handling of relief work in Minnesota. Only seven contact committee members reported county doctors.

Seventy-five per cent of the counties are using the old SERA fee schedules. Reductions from normal prevailing fees varied on these reports from 10 to 60 per cent. The majority were between 40 and 50 per cent. Need of a universal fee schedule seems obvious from this questionnaire. Fees for some surgical operations vary from $100.00 to $200.00. The average for hysterectomy was found to be $150.00; for gall bladder $100.00; for tonsillectomy $15.00; and for hospital obstetrics $15.00.

Most of those who responded are dissatisfied with the township plan of handling care for the indigent.

In most cases authorizations are secured from the county welfare board. In other cases, authorizations were secured from any official, up to the mayor.

For State-wide Campaign

L. R. Critchfield, Chairman, Committee on Immunization and Vaccination: It is esential that we make a concerted state-wide effort to push vaccination and immunization of children in our state and the first step is undoubtedly a survey of the extent to which these measures are now being pushed by county medical societies. When we have this information, which, we hope, will be available for the State Meeting, then we want to draw up a standard method which will be available to every county in the state for this work. Every possible assistance will be given by the committee to foster this effort.

Overcrowding and Senility Problem

Dr. George Earl, Chairman, University Relations Committee: The current situation in the state institutions is very briefly as follows:

There are 500 beds in the University hospitals and they could use 5,000. Hundreds of hernia cases, tonsillectomies, prostatectomies are on the waiting list, and undoubtedly these cases should be cared for at home.

Tuberculosis sanatoria are not overcrowded; but the tuberculosis problem of the other state institutions, especially the institutions for the insane, is acute. A separate tuberculosis institution is needed for care of these patients. More coöperation between the tuberculosis institutions and private physicians is needed also, in after-care of discharged patients.

The School for the Feeble-Minded at Faribault is overcrowded and many of its cases have been transferred to the Colony for Epileptics at Cambridge with the result of over-crowding at the Cambridge Institution also. Institutions for the insane are being filled up with the senile cases. Beds are two feet apart in some institutions, and in all of them the senile, who are multiplying with the extension of our life span, are crowding out the younger people for whom treatment might be effective. We are going to have to lay out more money for care of the older insane.

The inebriate problem also complicates the condition in our nervous and mental institutions. These cases should be removed from the state hospitals and sanatoria and placed in state workhouses, where they could support themselves.

For Professional Get-togethers

Dr. J. M. Hayes, Minneapolis, Chairman, Committee on Inter-Professional Relationships: The first chairman of the Inter-Professional Committee, Dr. F. J. Savage, put the committee on our map but was unable to get far with the promotion of inter-professional meetings in the individual counties. We know, in Hennepin County, the value of such get-togethers. Our "Economics Club" is now some years old and it has been very effective in handling some of our Hennepin County problems.

This year, we are hoping to see that there are more such meetings throughout the state. We have already sent out letters to the secretaries following a meeting of the state committee last month. We are going to follow up those letters until some action is achieved.

Hospital Building

Dr. L. L. Sogge, Chairman, Committee on Public Policy: There are two bills for hospital building in Congress now: one, introduced by Senator Wagner of New York, for emergency building of hospitals in communities which can operate but cannot construct such institutions; the other introduced by Senator Mead of New York for a larger appropriation to be made available as needed for construction of hospitals and other sanitary projects and facilities and also to provide funds for operations if they are needed for a period up to four years.

"We Feel More Kindly"

We feel more kindly toward Senator Wagner as a result of his new bill than we did before. His program is fine in theory, but I, myself, cannot see how any community, which is so poor it cannot build a hospital, will be able to keep a hospital going. The proposal brings up many questions. Will there be physicians to staff the hospital in these communities or will it be necessary to import them? If a hospital is built as suggested and the community fails to live up to standards or fails to support the hospital, will it then revert to the government and be run by the government as a federal medical institution for civilians?

I do not know of any community in Minnesota that could make application for a hospital of this kind. It seems to me far better to arrange for assistance to already existing hospitals so as to provide for occupancy of already existing beds.

Objectives Should Be Supported

Dr. R. G. Leland, Chicago, Director, Bureau of Medical Economics, American Medical Association: The profession of medicine should view the entire situation which has led to current legislative proposals with understanding and sympathy. Objectives should be supported but the means to achieve the objectives should be carefully considered. I doubt if any of us can speak with certainty about the new federal hospital building proposal until we know just what the relationship is to be between the federal government and local control. If the hospital is not operated to conform with standards of the federal government it might, indeed, revert to federal control.

I believe we should explore every other possibility for building of any urgently needed hospital without the investment of federal funds. We should thus avoid any possibility of competition with church and voluntary hospitals. Certainly, we must proceed cautiously and study carefully anything, however attractive it may be, which might eventually carry with it federal control for care of the sick.

Fracture Program

Dr. R. G. Webb, Chairman, Committee on Fractures: By means of active fracture committees, whose chairmen are members of a state-wide fracture committee, we are hoping to establish a state-wide program for better first-aid in fracture cases in Minnesota. We need better transportation for fracture cases; also, better hospital equipment for care of these caess, better x-rays and, finally, better post-graduate education in the handling of these cases.

A part of the program must be carried on with public groups of all kinds. Lay training in first-aid is essential. It is equally essential that all ambulances be required by ordinance to carry proper equipment. Good emergency fracture equipment can be constructed for $1.10 (10 cents for iron and $1.00 for labor). But our educational program must not stop there. Technicians need instruction in taking of radiographs and we, ourselves, need to discuss our cases freely in hospital staff meetings, eliminating all personal feeling so that we may learn from each others' experiences.

Fractures present one of our most serious problems. The problem cannot be met without an active state-wide program and uniform methods.

"We Seek from You"

Mr. Walter Finke, Director, Division of Social Welfare: We offer you our whole-hearted coöperation in the solution of the medical problems of relief and social welfare. We seek from you every help you can give us.

Our medical problems are among the most important that we have before us for solution. We believe

that, for the best result, government agencies and doctors must get together.

Since the re-organization went into effect last July, we have been studying all our expenditures. For instance, we have been able to cut our staff from 560 to 285. We are trying now to find out if five per cent, for example, is the right percentage to pay out of relief funds for medical care. We are also studying every phase of our medical program with the Medical Advisory Committee of doctors selected from among a list submitted by your association. Our object is to aid and educate the County Welfare Boards upon whom the final responsibility rests. In dealing with the county welfare boards, we must depend, as you know, upon coöperation and education rather than any mandatory right.

New Methods Developed

The principle of decentralization which applies here is sound, I am sure, and good progress can be made within our present set-up. We have developed new methods of procedure for the medical care of several groups which come within the province of the Division of Social Welfare in coöperation with the Medical Advisory Committee. We are now starting on procedures for recipients of Aid to Dependent Children. What we do on this matter as on all other procedures involving medical care will be done only with and through the Medical Advisory Committee.

Learn by Reading

Dr. William A. O'Brien, Director, Post-Graduate Medical Education, University of Minnesota:

We hear a great deal about the educational value of the radio; but the amount of learning actually absorbed by ear is small unless it is supplemented by reading and fosters reading.

The principal means of post-graduate education for doctors are post-graduate courses, private reading, and consultation.

In the future there will be two types of people—those who do and those who do not continue their formal education after their under-graduate training is completed.

Realization of this fact is indicated in the large number of bids for continued education which come to us nowadays from older age groups.

We need to continue our studies because of the influx of new knowledge which began about twenty years ago and continues without a pause.

Gaps Must Be Filled

There were gaps in the undergraduate education of all of us which must be filled in addition to keeping all of our information up to date. In so doing we are obliged to combat tendencies to indifference and ignorance and a feeling that "the old stuff was good enough." It is the essence of medicine in a democracy that every man should have the opportunity to be aware of every new thing.

It is encouraging to know that we can go on learning into our seventy's. As we grow older, we tend to lose, not the ability, but the desire to learn.

The commonest excuses heard among doctors for not taking this or that course are: "too busy," "can't get away," or "patients need them." To those who give the last named excuse we sometimes say: "Think how many might live because you went away."

Remarkable Growth

So far, 2,120 have registered for medical and hospital courses of three days to a week at the Center for Continuation Study. Growth of interest among hospital personnel in these courses has been remarkable. The Center has proved its worth as a new method of providing intensive post-graduate education in the guise of a professional vacation. As such, it is unique in the United States, but there are other methods of post-graduate education which should not be neglected. Reading is better than listening and writing is better than reading. We should keep up on the medical journals and the new monographs. Incidentally, packets offered in connection with the State Medical Association's subject-of-the-month programs offer a valuable aid to professional education as well as to public health education and everybody should send for them.

In the midst of a busy life, the late W. J. Mayo found time for an hour's reading of the medical journals every day. Obviously, a regular program of reading pays.

There are two ways to improve our public health; of course, one is by police power, the other is by constant voluntary individual improvement in the practice of medicine.

THE COUNCIL MEETS

The Minnesota State Medical Association will have a representative at the United States Pharmacopœial convention for the first time this year.

Decision to send Dr. Raymond N. Bieter, University of Minnesota, official delegate from the association, was made by the Council at its February 23rd meeting with a view to securing an adequate representation of medical men at this important convention.

Doctors in Minority

The United States Pharmacopœial convention meets once every ten years for the purpose of setting standards for old accepted drugs and for new drugs that are to be introduced into medical practice. Pharmacists and pharmaceutical manufacturers are well represented at these conventions but physicians and medical schools, both of whom are equally interested in the deliberations, are sometimes in the minority. Dr. Bieter will confer with Dr. A. E. Osterberg of Rochester, and Dr. E. J. Fogelberg of St. Paul, the

other official Minnesota delegates, and with Alternates J. L. Bollman of Rochester and F. G. Benn of Minneapolis as to policies and procedures of the convention.

Insurance Policies Studied

Several questions were submitted concerning provisions of policies written by the large companies for malpractice insurance in Minnesota. The Council reëmphasized a fact which seems to be the source of some misunderstanding among members, that the Minnesota State Medical Association has never officially endorsed any policy for malpractice insurance.

Several reputable insurance companies write malpractice insurance in Minnesota. The policies of all these companies will be studied and a report made to the House of Delegates.

May Advertise

County medical societies may sponsor local advertising campaigns on modern medical service and the function of the family doctor, if the members vote their approval. A series of advertisements prepared by a Minnesota newspaper man was submitted to the Council for its information and the Council voted again to leave it to the county medical society to determine local policies on such matters. Only one stipulation was made—that the copy be carefully read and approved by the doctors.

* * *

Special publicity campaigns launched in connection with the opening of hospitals or other community projects involving the doctors were also judged to be a matter for local determination and supervision.

Epilepsy Organization Incorporates

Articles of incorporation for a new voluntary health education agency were presented by Dr. D. E. McBroom of Cambridge for the information of the Council. The new organization will foster research in epilepsy and at the same time try to extend public understanding of the disease. Many physicians are interested in the new organization, Dr. McBroom said, and every effort is being made to see that activities of the new society are kept under proper supervision and control.

WOMEN SHOULD KNOW

The active interest of large women's organizations in the Wagner Health bill has persisted in spite of the fact that the bill has never been reported out of committee and a new hospital bill has ostensibly taken its place in the affections of its promoter.

It is clear that a concerted drive to press the women's organizations for definite action on this bill, or at least on the general provisions of the National Health program, is in progress.

It is, of course, entirely proper that American women should inform themselves on important national issues such as this one. If the American people are in grave need of sweeping reforms in the care of the sick and of tremendous new appropriations for the public health, the women should know about the need and work for them.

On the other hand, if the proposed legislation endangers something very precious to Americans and if the vast appropriations will achieve, principally, the establishment of new government bureaus, at a heavy cost to future generations, with no assurance of practical aid where aid is needed, then American women should know about that, too.

Outlines Distributed

Mimeographed outlines of the report of the President's Inter-Departmental Committee, including the report of findings of the WPA Health Survey and of the Wagner bill which aims to correct the situation, have been prepared and are already being distributed among clubwomen in Minnesota.

No official action has ever been taken by the largest of the women's organizations, the Minnesota State Federation of Women's Clubs, on the subject. Officers of the organization have conferred with representatives of the Minnesota State Medical Association on the matter and are well informed on the policies for Minnesota of the doctors and the public health officials of the state. They have asked for a companion piece expressing this policy and indicating actual needs and how they can be met in Minnesota for distribution to their members. This material is now being prepared and will be available upon request.

Easy Appeal

It is easy enough to make an appeal to a group whose professed interest is public welfare and particularly the welfare of the women and children, on the basis of an alleged need for medical care.

Backers of the National Health Program in toto are quick to seize upon the genuine idealism of such groups as a means of persuasion.

Physicians who explain the attitude of medicine toward the whole problem must speak in terms of idealism, also—but of a sounder idealism which cherishes the fine things already accomplished, which preserves human dignity, safeguards orderly progress and protects it from the heavy hand of politics.

Women should know that you cannot bring about a millennium by passing a bill and making an appropriation especially in the field of health. Improvement in our national health depends upon many factors, and ample facilities for medical and hospital care constitute but one of them. A clear understanding on the part of everybody about what makes a healthy people and how progress in medical science and the control of disease are achieved should be the objective.

DOCTORS CAREY AND SHIPSTEAD SPEAKING

Minnesota dentists, last month, brought to the Twin Cities one of the most vigorous and picturesque of all medical orators, Dr. Eben J. Carey, Dean of Medicine at Marquette University.

During his stay in Saint Paul, Dr. Carey talked to the dentists at their annual meeting on government medicine; he spoke on the radio and he addressed the regular Open Forum of the Chamber of Commerce. Reverberations are still heard in widening circles from his pungent and vigorous remarks.

Senator Henrik Shipstead, guest of honor, also chose to express himself in unmistakable opposition to government operation of medical and dental services at the dentists' meeting. A unique occasion—take it all in all—and one which showed how indissolubly linked are the future of medicine and dentistry and how closely their thinking and their policy parallel the policy of organized medicine.

Befuddled Legislation

Some characteristic excerpts of the remarks of both Dr. Carey and Senator Shipstead are given below:

DR. CAREY: A lot of befuddled legislation is being presented for passage in Congress these days and in our state legislatures. All of it is based on the premises that the cost of medical care is too high in America and that medical care is inadequate.

I challenge both premises.

Americans are the healthiest people ever seen any time, anywhere. Their health depends upon healthy minds and souls as much as upon healthy bodies.

"You Cannot Buy Health"

You cannot go out and buy five dollars' worth of health. And by the same token, you cannot purchase health by immense appropriations of money if, at the same time, you take away the dignity and rights of the human being.

A series of bills was introduced in the Wisconsin legislature a few years ago which would have fastened compulsory sickness insurance, worse than anything in Europe, on the state of Wisconsin. They said there was an acute need for such legislation; but apparently the acute need was really for the doctors and the dentists to put a little emotionalism into the presentation of their own objectives—because we stopped the Beimiller bills by only six votes!

Milwaukee is Healthier

As a result of that vote, however, we made an extensive study of medical care in Wisconsin and we sent Mr. Crownhart to Europe to investigate the European systems after which Beimiller had patterned his legislation. We found that the Irish and the Germans in Milwaukee are far healthier than the Irish in Ireland or the Germans in Germany.

Nothing in Europe could compare with our system of medical care in Milwaukee, Wisconsin, or in any other center of the United States.

Since 1929, we have had bankruptcy in government in the United States and yet there are people who would crowd our bankrupt government into the administration of medical care to the sick.

Bait for Politicians

In America we have a constitution and a Bill of Rights. We determine our course by mutual cooperation, not by paranoid dictatorships. We should understand what a sickness tax will and will not mean. In the first place, it will mean graft because a sickness tax is too big a bait for any politician. In the second place, it will not mean better health. If it did mean that, there would be better health in Europe than there is today.

In any case, health is not an end in itself; it is a means to an end. The purpose of medicine is not to generate healthy brutes but to aid in the generation of healthy, well-balanced human beings, and the souls of

human beings are more important than their bodies! Never should we forget that many magnificently healthy people have crippled bodies. Many who have contributed most to our welfare have suffered from incurable ailments.

To make people believe that you can buy health over the counter—so much health for so much money—is to put false ideas into their heads.

Only True Advance

The only true advance in health as in any other department of life comes by education and coöperation. It is true that in America we sometimes confuse freedom with license. Sometimes we forget that our freedom carries with it responsibilities. Dentists and medical men have accepted those responsibilities in the past. They will continue to accept them in the future if government does not step in to take away that freedom.

"We Are All Human"

SENATOR SHIPSTEAD: All of us are agreed, I believe, that good care must be made available to all who need it. Some think that government should control and finance such care. Others are equally positive that while the government must aid in financing the care of the indigent, if the government attempts to control and regulate all care for the sick, both medicine and dentistry will deteriorate.

For my part, I incline to agree with these others. I have seen people who are assured of a salary no matter what they do to take care of a sick patient. I know what happens when the incentive to excellence is removed. We are all human and won't be anything else, God help us, until further notice. . . .

Unemployment Must Be Removed

On the other hand, I do not believe that our present condition can be permanent. Unemployment is like an economic cancer which must be removed or our economy will collapse. But, I believe that we can and will remove it, that ultimately we shall find work for all so that they can take care of themselves.

We must face facts as they are, however, and not as we wish them to be. We do not stand still; we move on, one way or the other.

Over the Line

It is that tendency which we must take into account in the field of public health and medicine. Heretofore, government has occupied itself chiefly in setting standards. Shall it now make the important step over the line into actual operation of the care of the sick?

I believe it must not. I believe that government must levy taxes to pay for care of the poor and I believe that government must continue to fix standards; but I also believe that actual operation of medical care must be left to the men who are trained in the basic sciences. I do not believe that government bureaus can care for the sick.

Senator Shipstead is the only representative of the healing profession in the Senate. As such and as senior senator from Minnesota, he was presented with a memorial from the Minnesota State Dental Association at this meeting.

"A LEOPARD'S SPOTS"

(Monthly Editorial Prepared by the Medical Advisory Committee)

Since the time when man first began to think and evaluate things, the question of heredity or environment as an answer to the difference in the nature and actions of people has been a moot question.

Why is it that starting with a given personality and heredity tendencies and adding to these a professional education—medicine, law or any other—one man will search for the better things in life while another will find his level in the lower strata of both thought and society? Having once found the level of his environment the chances are overwhelming that he will continue at that level. Criminal tendencies which grasp men who have found the lower elevels make it impossible for them to rise out of them. Educational advantages many times seem further to militate against such a change.

Are we, as members of our Association and supposedly in the upper level of society, lowering ourselves in the estimation of our clientele when they find us not only associating with but condoning the criminal acts of certain of our profession by urging their retention in medical circles?

If the writing of an unnecessary number of narcotic and liquor prescriptions is cause for censure, if the performing of criminal abortions is punishable at law, then your Medical Advisory Committee believes that when men convicted of these crimes testify in Court, especially in malpractice cases, their testimony should be considered of the same level of veracity as the standard of their practice and that men in our Association should think twice before urging their retention in our noble and honorable profession. That you cannot change a leopard's spots no matter what the nature of his environment, goes without saying.—B.J.B.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Julian F. Dubois, M.D., Secretary

Court Declares Mistrial in Case of Chiropractor

Re State of Minnesota v. Arthur J. Kolling.

On March 21, 1940, after three days of trial, Judge W. W. Bardwell declared a mistrial in the prosecution of Arthur J. Kolling, chiropractor, 805 LaSalle Avenue, Minneapolis. The defendant's lawyer stated that the defendant was seriously ill with ptomaine poisoning and under the care of Dr. W. A. Bessesen, physician and surgeon. A statement from Dr. Bessesen was presented to the Court. Judge Bardwell promptly declared a mistrial and discharged the jury.

The defendant, who is not licensed to practice medicine in the State of Minnesota, but who holds only a chiropractic license, owns and operates the Hennepin Clinic at 805 LaSalle Avenue, Minneapolis. He was indicted by the grand jury of Hennepin County on May 16, 1939, on a charge of practicing medicine without a license. The indictment grew out of testimony that the defendant sutured a wound of a ten-year-old boy who had been injured by an automobile at 8th and LaSalle Avenue, Minneapolis, and was taken to the office of the defendant prior to the arrival of the police ambulance. The accident occurred on April 14, 1939, and on April 28, 1939, the defendant sent the family a bill of $25 for "services rendered."

Kolling was first placed on trial on this indictment in June, 1939. The jury deliberated more than twenty-six hours and stated to the Court that it was unable to agree. It was reported to be deadlocked 6 to 6. The present trial was a re-trial of the same indictment.

Kolling pleaded guilty in the District Court of Hennepin County in 1928, to a charge of practicing medicine without a license and was fined $150. In 1938, he pleaded guilty in the United States District Court at Minneapolis to an indictment charging him with a conspiracy of violating the Internal Revenue laws of the United States. He was fined $2,000 on this charge and upon the payment of this fine, a two-year prison sentence was suspended for a period of three years.

Physicians Licensed February 9, 1940

January Examination

Anderson, Bruce Murat—Stanford U., M.D. 1938, Rochester.

Arack, George—U. of Minn., M.B. 1939, Saint Paul.

Ashburn, Frank Strother—U. of Texas, M.D., 1938, Minneapolis.

Barker, John Dennis—U. of Minn., M.D. 1939, Duluth.

Beer, John Joseph—U. of Minn., M.B., 1939, Saint Paul.

Bergh, Solveig Margaret—U. of Minn., M.B. 1938, M.D. 1939, Minneapolis.

Brown, Robert Clifford—U. of Mich., M.D. 1933, Saint Paul.

Campbell, Joseph Robert—U. of Manitoba, M.D., 1937, Rochester.

Cariker, Mildred—U. of Texas, M.D. 1936, Rochester.

Dysterheft, Arnold H.—U. of Minn., M.B., 1937, M.D. 1938, Glencoe.

Eaves, George Bennet—U. of Minn., M.D., 1938, M.D. 1939, Minneapolis.

Evans, Gerald Taylor—McGill U., M.D. 1932, Minneapolis.

Ferguson, Franklin Faulkner—Yale U., M.D. 1936, Rochester.

Foss, Edward L., U. of Wis., M.D. 1934, Rochester.

Foster, Mark Anthony—Harvard U., M.D. 1937, Rochester.

Gjerde, William Peder—U. of Minn., M.B. 1939, Saint Paul.

Grahek, Jack Philip—Marquette, M.D., 1939, Ely.

Ivie, Joseph McKinney—Duke U., M.D., 1938, Rochester.

Jones, Richard Herbert—U. of Minn., M.B., 1939, Saint Paul.

Kelsey, Mavis Parrott—U. of Texas, M.D. 1936, Rochester.

Kent, Richard Nelson—Northwestern, M.B. 1936, M.D. 1937, Rochester.

Kimball, Charles Dunlap—U. of Buffalo, M.D. 1934, Rochester.

Knutson, Gerhard Elmer—U. of Minn., M.B. 1939, Saint Paul.

La Due, John Samuel—Harvard U., M.D., 1936, Minneapolis.

Lehnhoff, Henry John, Jr.—Northwestern, M.B., 1937, M.B. 1938, Rochester.

Leverenz, Carleton Walter—U. of Ill., M.D. 1939, Saint Paul.

Lorber, Victor—U. of Ill., M.D. 1938, Minneapolis.

Lott, Frederick Hartmann—U. of Minn., M.B. 1939, Saint Paul.

Love, William Robert—Kansas U., M.D., 1936, Rochester.

Lynch, Robert Clyde, II—Tulane U., M.D. 1938, Rochester.

MacCarty, Wm. Carpenter, Jr.—Johns Hopkins, M.D. 1937, Rochester.

MacKay, Hunter John—Western Reserve, M.D., 1937, Rochester.

Manson, Arnold Irvin—U. of Minn., M.B. 1938, Minneapolis.

Megibow, Samuel J.—U. of Minn., M.B., 1939, Saint Paul.

Miller, James Rex, Jr.—Northwestern, M.B., 1936, M.D. 1937, Rochester.

Mitchell, Berton David—U. of Minn., M.B. 1939, Saint Paul.

Moen, Dale Veo—U. of Chicago, M.D. 1939, Saint Paul.

Muller, Albrecht Eugene—U. of Minn., M.B. 1939, Saint Paul.

Neale, Roderick Malcolm—Stanford U., M.D. 1936, Rochester.

Otten, Donald Earnest—Northwestern, M.B. 1938, M.D. 1939, Minneapolis.

Palen, Benjamin Joseph—U. of Minn., M.B. 1939, Minneapolis.

Peters, Gustavus Alfred—Indiana U., M.D. 1938, Rochester.

Proffit, William Emory—U. of Minn., M.B. 1939, Minneapolis.

Reiley, Richard Edwin—U. of Iowa, M.D. 1938, Minneapolis.

Sayre, George Pomeroy—McGill U., M.D. 1938, Rochester.

Scott, Frank Matthew—Indiana U., M.D. 1937, Rochester.

Shick, Richard Montgomery—U. of Mich., M.D. 1935, Rochester.

Strom, Gordon Wilnard—U. of Minn., M.B. 1937, M.D. 1938, Rochester.

Teisberg, John Edwin—U. of Minn., M.B. 1939, Saint Paul.

Thompson, John Vernon—U. of Ill., M.D. 1939, Oak Terrace.

Throckmorton, Tom Dercum—Northwestern, M.B. 1937, M.D. 1938, Rochester.

Van Demark, Robert Eugene—Northwestern, M.B. 1938, M.D. 1939, Rochester.

Weisel, Wilson—Harvard U., M.D. 1938, Rochester.

Wilder, Russel Morse—Harvard U., M.D., 1938, Rochester.

Wolf, William Walter, Jr.—Hahnemann, Phila., M.D., 1939, Minneapolis.

National Board Credentials

Johnson, John Woodrow—U. of Minn., M.B. 1938, M.D. 1939, Kerkoven.

OF GENERAL INTEREST

The Minnesota State Medical Association study subject for April is "Cancer of the Digestive Tract."

* * *

Dr. M. H. Larson of Nicollet has opened an office at Waconia for the practice of general medicine and surgery.

* * *

A new directory of graduates of the medical school of the University of Minnesota has been compiled by the *Minnesota Alumni Weekly* office. It replaces a directory issued in 1936.

* * *

Dr. John A. Knights of Bemidji has been appointed Assistant Division Surgeon of the Great Northern Railroad, the division taking in the territory from Duluth to a point west of Bemidji. Dr. Knights is associated in practice with Drs. McCann and Johnson.

* * *

Dr. Albert Balmer, who has been associated with Dr. E. F. McElmeel at Pipestone since June, 1939, opened an office of his own on March 1. He is now located in the offices formerly occupied by the late Dr. Thomas Lowe.

* * *

Rochester was host to approximately twenty-five surgeons from several southern states at a meeting of the Southern Society of Clinical Surgeons, March 27-29. Dr. Charles W. Mayo and Dr. John M. Waugh of the Mayo Clinic arranged the three-day program.

* * *

Dr. Joseph G. Pollard of Hanover, New Hampshire, is spending his sabbatical leave at the University of Minnesota studying methods of teaching personal and public health in the Arts college and also studying the university athletic injury program.

* * *

Dr. Jerome Hilger and Helen Backer, both of Saint Paul, were married January 20, 1940. They have recently returned from their wedding trip in the east and are at home at 37 Inner Drive, Highland Village, Saint Paul.

* * *

Dr. M. E. Maun, pathologist at Saint Joseph's Hospital, Saint Paul, since 1938, has been appointed Assistant Professor of Pathology at the Wayne University Medical School, Detroit, Michigan. Dr. Maun received his medical degree from Northwestern in 1936.

* * *

Dr. Reed M. Nesbit, Head of the Division of Urology at the University of Michigan, will inaugurate the Franklyn R. Wright Lectureship in behalf of the Twin City Urological Society with a lecture on "Hypertension in Unilateral Renal Disease." The lecture will be given at the University of Minnesota. Details will be furnished later.

* * *

Dr. Albert V. Stoesser, associate professor in the pediatrics department at the University of Minnesota, has been awarded a $1,000 grant by the Markle Foundation of New York for the support of study of the relation of sodium and potassium balance to asthma.

* * *

The Annual George Chase Christian Lecture presented by the Cancer Institute of the University of Minnesota will be given on Tuesday evening, April 30, by Dr. John J. Bittner, National Cancer Institute Fellow, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. Dr. Bittner will speak on "Breast Cancer as Influenced by Nursing." Medical Sciences Amphitheatre, 8:15 p. m.

* * *

Minnesota Medical Alumni and their wives are urged to obtain tickets on registration at the State Medical Meeting for the annual banquet of the Alumni Association. The banquet will be addressed by Dr. Karl Buehler, Professor of Psychology at St. Thomas College and former head of a psychologic institute in Vienna, on the subject of "Hitler and Austria."

* * *

Dr. E. Sidney Boleyn, 76-year-old Stillwater resident and a relative of the famed Anne, told the County Officers' Medical Conference held in Saint Paul in February, that his mother is 104 years old and his father, about ten years older. Both are still living in India, where they are retired civil service employees of the British government. Greatest record for longevity in the family is an aunt who died at 124 years of age and an uncle at 127.

* * *

Dr. Raymond B. Allen of Detroit, a graduate of the University of Minnesota medical school, Class of 1928, has been appointed executive dean of the Colleges of Medicine, Dentistry and Pharmacy of the University of Illinois in Chicago. Dr. Allen, after completing a fellowship in urology at the Mayo Foundation, served as assistant dean of Columbia University medical school and then went to Wayne University medical school in Detroit as dean.

* * *

Dr. Walter C. Alvarez of Rochester is to be the banquet speaker at the annual meeting of the Northern Tri-State Medical Association in Battle Creek, Michigan, April 9. His topic will be "The Patient Who is Always Ailing in Spite of Many Treatments."

In March, Dr. Alvarez addressed the Douglas County Medical Society meeting in Omaha, Neb., and conducted a clinic in the St. Joseph hospital. He also addressed students of Creighton University school of medicine.

* * *

Dr. Adelbert Louis Dippel became associated with the University of Minnesota as associate professor of obstetrics and gynecology, March 1, to fill the position made vacant by the death of Dr. John A. Urner. Born in LeGrange, Texas, Dr. Dippel attended the University of Texas from 1920-28, receiving his B.A.,

M.A. and M.D. degrees. He did graduate work at Johns Hopkins University School of Medicine, where he has been an instructor and associate in obstetrics.

* * *

The Lotus D. Coffman Memorial Silver Service given by physicians who have attended courses at the Center for Continuation Study was formally accepted February 19, when the service was used for the first time.

The ophthalmologists and otolaryngologists two years ago started the fund for the service, which consists of six pieces—a modern tray, a coffee urn of the Georgian period, and four pieces of 1803 Early American solid silver—teapot, creamer, sugar and waste bowl.

* * *

The spring program at the Center for Continuation Study on the University of Minnesota campus, as announced by Dr. William A. O'Brien, follows:

April 1-6—Venereal Disease
April 29-May 1—Obstetrics
May 2-4—Health Problems of College Students
May 6-11—Electrocardiography
May 20-25—Pediatrics
May 23-25—Hospital, Medical and Institutional Library Service
June 6-8—Gynecologic Tumors

* * *

Two members of the University of Minnesota physiology department have been honored with fellowship awards.

Dr. Earl H. Wood, instructor, has been awarded a National Research Council fellowship in the medical sciences to work with Prof. A. N. Richards of the University of Pennsylvania.

Dr. Gordon K. Moe, also an instructor, has been awarded the Porter fellowship of the American Physiological Society to work with Prof. C. J. Wiggers of the Western Reserve University in Cleveland.

* * *

A new hip pocket oxygen flask and a new face mask, developed by Dr. Walter M. Boothby of the Mayo Clinic, Rochester, in coöperation with Captain Harry Armstrong of the army air corps' materiel division at Wright field, were exhibited at the meeting of the Federated Societies for Experimental Biology and Medicine in New Orleans, March 12-18.

The new mask was designed to prevent a pilot from inadvertently committing suicide, if he accidentally opens his mouth at high altitudes; the oxygen flask, to insure pilots of the necessary supply of gas if they are forced to bail out from high altitudes.

* * *

Physicians under thirty-five years of age, desirous of obtaining active duty with the United States Army, are being offered appointments in the Medical Corps Reserve in the rank of First Lieutenant. Wages of a First Lieutenant are $225.00 a month ($263.00, if married); that of a Captain $278.00 a month ($316.00, if married). In assignments where government quarters are available these amounts are $40.00 and $60.00, $60.00 and $80.00 per month less, respectively. Many of those under the age of thirty-two who received such appointments last year took entrance examinations for commissions in the Regular Army. Those in Minnesota interested should apply to the Commanding General of the Seventh Corps Area, New Federal Building, Omaha, Nebraska.

* * *

Physicians for the Panama Canal zone are wanted, there being a need for additional medical service in connection with the construction of new locks, which is expected to take at least four years.

Duties will be to care for health of employees and to give aid in case of accident. There are several well-equipped staff hospitals in the zone. Several Minnesota graduates are in the service.

Candidates must pass civil service examinations. Initial pay is $4,000 a year; maintenance may be secured in government houses for $15 to $30 a month; a trip to New York on an official boat costs but $30. The average temperature is 85 degrees.

Further information may be had by writing to Chief Health Officer, Balboa Heights, Canal Zone. Gilbert M. Stevenson, Minnesota '28, Dispensary, Gamboa Canal Zone district, Panama Canal, supplied the above information.

* * *

Several members of the University of Minnesota staff presented papers at the meeting of the Federation of American Societies for Experimental Biology in New Orleans, March 12-18.

Dr. Maurice B. Visscher, head of the department of physiology, presented a paper on "Super High Speed Cinematography of the Isolated Heart-Lung," prepared in coöperation with Dr. G. K. Moe, also of the University of Minnesota staff, and Dr. C. Landis of Columbia and Dr. W. A. Hunt of Wheaton college.

Dr. Charles F. Code, assistant professor of physiology, presented a paper on "A Comparison of the Histamine Content of Blood and Bone Marrow." Dr. Code was awarded the Theobald Smith prize for his work on histamine a year ago by the American Association for the Advancement of Science.

Dr. George O. Burr, professor of physiological chemistry, had for the title of his paper, "Limiting Factors in the Biological Synthesis and Chemical Analysis of Fatty Acids."

Two papers were presented by Dr. G. K. Moe and Dr. E. H. Wood. Titles are "Cardiac and Pulmonary Edema in Isolated Perfused Preparations," and "Correlation between Serum Potassium Changes in the Heart-Lung Preparation and the Therapeutic and Toxic Effects of Digitalis Glucosides."

"The Effect of Adrenalectomy on the Deposition in the Liver of Spectroscopically Active Fatty Acids," was the subject of a paper presented by Drs. Richard H. Barnes, Elmer S. Miller and G. O. Burr.

Dr. Ancel Keys, professor of physiology, presented a paper on "The Valvular Efficiency in Mitral and Aortic Insufficiency," which constituted a study of cardiac output by the x-ray kymograph and the acetylene methods, by which means the proportion of blood which leaks back through an insufficient valve can be determined.

MINNESOTA STATE MEDICAL ASSOCIATION

87th Annual Session

April 22, 23, and 24, 1940

Rochester, Minnesota

ANNOUNCEMENTS

Presiding officers at each session have been instructed by the Committee on Scientific Assembly to show a blue light on the speakers' rostrum two minutes before the end of each speakers' program time. A red light will show when his time is up. All meetings are in charge of committee members.

Register and Secure Your Badge at the Registration desk at the Mayo Civic Auditorium at 8 a. m. Registration on Sunday, April 21, will be in the lobby of the Kahler Hotel.

Telephone Service: Special incoming lines have been installed at the Registration desk. All local and long distance calls will be handled promptly.

Bring Your Membership Card: There will be no registration fee for those who present a membership card or receipt or other evidence from their county society or the state association or the American Medical Association nor for interns or members of associated professions including dentists, pharmacists, nurses, hospital personnel or social welfare workers who present invitations or other identification.

Badges: You are requested to wear your badge while you are on the convention floor. This is important and will greatly assist us to eliminate undesirable persons such as cranks and pickpockets who so frequently try to take advantage of meetings of this character.

Women's Auxiliary: Wives of physicians attending the meeting may secure programs of the business and social sessions of the Women's Auxiliary at the Women's Registration Desk in the lobby of the Kahler Hotel. All visiting women are cordially invited to attend special events arranged by hotesses of the Olmsted-Houston-Fillmore-Dodge County Medical Auxiliary. Among these is a tea at Mayowood, Monday, April 22. Every Auxiliary member is invited to attend the Annual Meeting and luncheon Tuesday, April 23, at the Rochester Country Club.

Automobile: Good parking space is available without charge east of the Auditorium.

Luncheons: Thirty-two Round Table Luncheons have been arranged for this meeting at Rochester hotels and restaurants, 11 on Monday, 11 on Tuesday, and 10 on Wednesday. Tickets must be purchased in advance for these luncheons. Lists of subjects and leaders are printed in this program. Attendance at each luncheon is limited, and late comers will be accommodated according to their choice if limits have not already been reached. Price of luncheon ticket is 75 cents.

Annual Banquet: The annual dinner for members, guests and their wives will be held at the Rochester State Hospital, Tuesday evening, 6:30 p. m., April 23. Governor Harold E. Stassen and Mr. Bernard H. Ridder of St. Paul, publisher of the *St. Paul Pioneer Press and Dispatch*, will be the banquet speakers. Tickets $1.25 per person.

The Southern Minnesota Medical Association will present a medal, following its annual custom, to the individual physician who presents the best scientific exhibit at this meeting. Judges will be selected from among distinguished out-of-state visitors. The award will be made at the Annual Banquet, Tuesday night.

Guest Speakers: In accordance with an established precedent, several special societies are sponsoring visiting guest speakers for this meeting. We are indebted, this year, to the following societies:

The Minnesota Radiological Society: Speaker—Bernard H. Nichols, Cleveland, will deliver the society's annual Russell D. Carman Lectureship in radiology.

Northwestern Pediatric Society: Speaker—Paul Louis Schroeder, Chicago.

The Society of Internal Medicine: Speaker—Norman Jolliffe, New York.

The Northern Minnesota Medical Association: Speaker—Harry E. Mock, Chicago.

The Trudeau Society: Speaker—Anthony J. Lanza, New York.

Other speakers appear at the invitation of the Committee on Scientific Assembly.

Open House: All physicians, visitors and their wives will be guests of the Mayo Clinic and the Olmsted-Houston-Fillmore-Dodge County Medical Society at an Open House to be held Monday night, 7:00 p. m. in the Arena at the Mayo Civic Auditorium. Exhibits will be open for inspection and there will be music and special entertainment. Refreshments will be served.

Medical Women's Luncheon: The American Medical Women's Association, Minnesota Branch, will hold a luncheon meeting at the Mayo Foundation House, Monday noon, April 22. All women physicians are invited. Make reservations in advance through Della G. Drips, Mayo Clinic. There will be no charge for this luncheon.

Alumni Dinner: The Minnesota Medical Alumni will hold its annual reunion dinner at 6 p. m. Monday, April 22, in the Kahler Cafe. Tickets at the Registration Desk. Price $1.25 per person.

Museum: The Mayo Foundation Museum of Hygiene and Medicine, directly across from the Mayo Clinic Building, will be open each day to members and visitors. Hours: 9 a. m. to 12 m. and 1:30 p. m. to 5 p. m.

Physical Therapy Demonstration: There will be demonstrations of Physical Therapy by F. H. Krusen and his staff Monday, April 22, at 10 a. m. and 3 p. m. at the Museum. The Museum lecture room will accommodate only 50 persons, and those who wish to attend should make reservations in advance with F. H. Krusen, Mayo Clinic, Rochester.

Tour and Demonstration at the Institute of Experimental Medicine of the Mayo Foundation: Tours of the Institute and demonstrations of its work have been arranged for Monday, April 22, at 10 a. m. and 3 p. m. Reservations should be made in advance with F. C. Mann at the Institute, Rochester.

Approximately 40 can be accommodated for each tour. Buses leave the Kahler hotel at 9:45 a. m. and 2:45 p. m.

Minnesota Radiological Society: A dinner in honor of Bernard H. Nichols, Carman Lecturer, will be given by the Minnesota Radiological Society at the Kahler hotel cafe Tuesday evening at 6:30 p. m.

Hotels: See enclosed folder for list of Rochester hotels with rates, locations and application blank for accommodations. Detach application blank, fill out and mail. The clerk will forward your application promptly if accommodations are not available at the Hotel of your first choice.

Golf: The annual Golf Tournament of the Minnesota State Medical Association will be held Sunday, April 21, 1 p. m. at the Rochester Country Club, weather permitting.

This is one of the finest golf courses in the country and all medical golfers are urged to participate provided the greens are open. Registrations should be made in advance with J. W. Kernohan, Mayo Clinic, Rochester. Attractive prizes have been donated for the winners.

GUEST SPEAKERS

Paul Budd Magnuson is Associate Professor of Surgery at Northwestern University and attending surgeon at Passavant Memorial and Wesley Memorial Hospitals, Chicago.

Harry E. Mock is Associate Professor of Surgery at Northwestern University, Senior Surgeon at Saint Luke's Hospital, Chicago, and chairman of the Council on Physical Therapy of the American Medical Association.

Fred Lyman Adair is Professor of Obstetrics and Gynecology at the University of Chicago, Chief of Service at the Chicago Lying-In Hospital, and Chairman of the American Committee on Maternal Welfare, the Committee on Prenatal and Maternal Care, White Conference on Child Health, and the American Congress on Obstetrics and Gynecology.

Norman Jolliffe is Associate Professor of Medicine at New York University College of Medicine and Chief of the Medical Service in the Psychiatric Division of Bellevue Hospital.

Bernard H. Nichols is President of the Radiological Society of North America, Chancellor of the American College of Radiology and roentgeneologist at the Cleveland Clinic in Cleveland, Ohio.

Nathan B. Van Etten is President of the American Medical Association, Medical Director, Consulting Physician, and President of the Morrisania City Hospital; President and Visiting Physician at the Union Hospital and Past President and Trustee of the Medical Society of the State of New York.

Paul Louis Schroeder is Director of the Institute of Juvenile Research, criminologist for the State of Illinois, author of several books on juvenile delinquency. He is now engaged in a study, in coöperation with the Department of Pediatrics of the University of Illinois, on emotional aspects of physical disease.

Russell L. Cecil is Professor of Clinical Medicine, Cornell University Medical School, Professor of Medicine, Polyclinic Medical School and Hospital, Associate and Attending Physician, New York and Bellevue Hospitals, Consultant in Medicine, New York Infirmary of Women and Children, Nyack Hospital, Nyack, New York, and Saint Mary's Hospital, Passaic, New Jersey, and Chairman of the New York State and New York City Committees on Pneumonia Control.

Mr. Bernard H. Ridder is publisher of the *Saint Paul Dispatch and Pioneer Press.*

Hon. Harold E. Stassen is Governor of Minnesota.

Anthony J. Lanza is Assistant Medical Director of the Metropolitan Life Insurance Company, Consulting Surgeon of the United States Bureau of Mines and Medical Consultant to the General Motors Corporation. He has conducted special research in industrial hygiene and occupational diseases and especially in the diseases due to inhalation of dusts.

John O. Bower is Director of the Department of Surgical Research, Temple University, Chief Surgeon to the Philadelphia General, Saint Luke's and Children's and Northeastern Hospitals of Philadelphia and Director of the Foundation for Clinical and Surgical Research. Since 1933 he has been Chairman of the Commission on Acute Appendicitis Mortality of the Medical Society of the State of Pennsylvania, and he is originator of the Philadelphia Plan for the Reduction of Appendicitis Mortality.

BUSINESS PROGRAM

Kahler Hotel

Sunday, April 21

3:00 P.M.—Council .....University Club

4:00 P.M.—Reference Committees

7:30 P.M.—House of Delegates.....Sun Room

Address: An American Health Program NATHAN B. VAN ETTEN, President, American Medical Association

President's Address: B. S. ADAMS, President, Minnesota State Medical Association

Greetings: RAYMOND G. ARVESON, President, State Medical Society of Wisconsin

Monday, April 22

7:30 A.M.—Council .....University Club

12:15 P.M.—House of Delegates.....Cafe

Tuesday, April 23

7:30 A.M.—Council .....University Club

Wednesday, April 24

7:30 A.M.—Council .....University Club

10:45 A.M.—Installation of Officers.....
Mayo Civic Auditorium

SCIENTIFIC PROGRAM

Monday, April 22

Morning Session

A. M.

8:00 Visit Scientific and Technical Exhibits

8:30 Scientific Cinema.....North Room

Fistulectomy
L. A. BUIE.....Rochester

9:00 What's Wrong with the Patient Who is Always Tired?
W. C. ALVAREZ.....Rochester

9:15 Facts and Assumptions Regarding the Endocrine Glands
E. H. RYNEARSON.....Rochester

9:30 Medical and Surgical Treatment of Prostatism
G. J. THOMPSON.....Rochester

10:00 What's New in Cancer Research?
W. C. MACCARTY.....Rochester

(Intermission)

10:15 Visit Demonstrations, Scientific and Technical Exhibits
Scientific Cinema .....North Room

The Management of Diabetes
R. M. WILDER.....Rochester

11:00 The Sulfamido Compounds: Their Practical Applications in Clinical Medicine
A. E. BROWN.....Rochester

11:15 Practical Hints on the Use of Vitamin Preparations
R. M. WILDER.....Rochester

11:30 Recent Advances in the Treatment of Diseases of the Liver
A. M. SNELL.....Rochester

11:45 Proctological Problems We Don't Like to Discuss
L. A. BUIE.....Rochester

12:15 **Round Table Luncheons**

Roentgen Therapy for Inflammatory Conditions
A. U. DESJARDINS.....Rochester

Management of Nephritis
N. M. KEITH.....Rochester
M. W. BINGER.....Rochester

Treatment of Peritonitis
J. M. WAUGH.....Rochester

Oxygen Therapy
W. M. BOOTHBY.....Rochester
W. R. LOVELACE.....Rochester

Arthritis
RUSSELL L. CECIL.....New York City
P. S. HENCH.....Rochester
C. H. SLOCUMB.....Rochester

Anesthesia
J. S. LUNDY.....Rochester
E. B. TUOHY.....Rochester

Peripheral Vascular Disease
E. V. ALLEN.....Rochester
N. W. BARKER.....Rochester

Diseases of the Blood and Their Treatment
C. H. WATKINS.....Rochester
B. E. HALL.....Rochester
M. M. HARGRAVES.....Rochester

Diagnosis and Management of Common Skin Lesions
P. A. O'LEARY.....Rochester

Management of Urinary Tract Infections
J. L. EMMETT.....Rochester
E. N. COOK.....Rochester
T. L. POOL.....Rochester

Refraction
A. D. PRANGEN.....Rochester

Afternoon Session

P. M.

1:30 Visit Demonstrations, Scientific and Technical Exhibits
Scientific Cinema .....North Room

Recent Traumatic Deformities of the Face
G. B. NEW.....Rochester

2:15 Symposium on Chronic Backache and Sciatica Caused by Protruded Intervertebral Disk
M. N. WALSH.....Rochester
J. D. CAMP.....Rochester
J. G. LOVE.....Rochester

2:45 **Mayo Foundation Lecture**

Present Trends in the Study of Arthritis and Rheumatism
RUSSELL L. CECIL.....New York City
Professor of Clinical Medicine Cornell University

(Intermission)

3:15 Visit Demonstrations, Scientific and Technical Exhibits
Scientific Cinema.....North Room

Complete Rectal Prolapse (Surgical Repair)
C. W. MAYO.....Rochester

4:00 Gastric Cancer Masquerading as Benign Disease; Differential Diagnosis; Surgical Treatment
G. B. EUSTERMAN.....Rochester
WALTMAN WALTERS.....Rochester

4:20 Symposium on Diagnosis and Treatment of Chest Tumors
H. J. MOERSCH.....Rochester
H. M. WEBER.....Rochester
S. W. HARRINGTON.....Rochester

4:50 A Recently Recognized Type of Headache; Diagnosis and Treatment
B. T. HORTON.....Rochester

Evening—7:00 P. M.

Open House....Arena, Mayo Civic Auditorium

Music, Floor Show, Refreshments

The Mayo Clinic and the Olmsted-Houston-Fillmore-Dodge County Medical Society will be hosts

Tuesday, April 23

Morning Session

A. M.

8:00 Visit Scientific and Technical Exhibits

8:30 Scientific Cinema .....North Room

Hay Fever
L. E. PRICKMAN.....Rochester

9:00 **Fractures**
Presiding: R. C. WEBB, Minneapolis

Elbow Joint
M. H. TIBBETTS.....Duluth

Ankle
M. O. OPPEGAARD.....Crookston

Os Calcis
O. W. YOERG.....Minneapolis

9:45 Fracture of the Neck of the Femur
PAUL B. MAGNUSON.....Chicago, Ill.
Associate Professor of Surgery, Northwestern University Medical School

(Intermission)

10:15 Visit Demonstrations, Scientific and Technical Exhibits

Scientific Cinema.....North Room

Treatment of Scarlet Fever (in color)
F. E. SCHMIDT.....Chicago, Ill.

11:00 **Pre-operative Care**

Surgery of the Biliary Tract
E. M. JONES.....Saint Paul

Preparation of the Diabetic Patient
A. H. BEARD.....Minneapolis

Surgery of the Stomach
N. H. BAKER.....Fergus Falls

11:30 Skull Fractures and Cerebral Injuries
HARRY E. MOCK.....Chicago, Ill.
Associate Professor of Surgery, Northwestern University Medical School

12:15 **Round Table Luncheons**

Chemotherapy (Sulfanilamide, etc.)
W. W. SPINK.....University of Minnesota

Office Gynecology
J. J. SWENDSON.....Saint Paul

Management of Associated Injuries with Craniocerebral Injuries
HARRY E. MOCK.....Chicago

Medical Management of Gall Bladder Disease
E. T. HERRMANN.....Saint Paul

Diseases of the Kidney from a Diagnostic Standpoint
BERNARD H. NICHOLS.....Cleveland

Allergy
A. A. WHITE.....Minneapolis

Management of Peptic Ulcer
O. H. WANGENSTEEN...University of Minnesota

Common Diseases of the Rectum
W. A. FANSLER.....Minneapolis

Contributing Causes of Arthritis
PAUL B. MAGNUSON.....Chicago

Care of the Premature
A. V. STOESSER.....University of Minnesota

Afternoon Session

P. M.

1:30 Visit Demonstrations, Scientific and Technical Exhibits

1:30 Scientific Cinema .....North Room

Some Practical Pointers on the Treatment of Intra-Capsular Fractures of the Neck of the Femur
W. D. WHITE.....Minneapolis

2:15 **Coronary Disease**

Diagnosis
S. MARX WHITE.....Minneapolis

Electrocardiogram
HARRY OERTING.....Saint Paul

Treatment
F. J. HIRSCHBOECK.....Duluth

2:45 Pneumoconiosis
ANTHONY J. LANZA.....New York
Assistant Medical Director Metropolitan Life Insurance Company

(Intermission)

3:15 Visit Demonstrations, Scientific and Technical Exhibits

Scientific Cinema.....North Room

Open Operation for Chronic Empyema
S. W. HARRINGTON.....Rochester

4:00 **Russell D. Carman Memorial Lecture**

Indications for the Use of Excretory Urography in Diagnosis

BERNARD H. NICHOLS.....Cleveland, Ohio
President of the Radiological Society of North America

Introduction
L. G. RIGLER.....University of Minnesota

Evening—6:30 P. M.

Annual Banquet—Rochester State Hospital

Toastmaster: BERTRAM S. ADAMS, President, Minnesota State Medical Association

Address of Welcome: JOHN DEJ. PEMBERTON, President, Olmsted-Houston-Fillmore-Dodge Medical Society

Introduction of MRS. M. A. NICHOLSON, Duluth, President, Women's Auxiliary

Presentation of Southern Minnesota Medical Association Medal

Address: The Honorable HAROLD E. STASSEN, Governor of the State of Minnesota

How the Peace of the World Was Lost
MR. BERNARD H. RIDDER, Saint Paul
Publisher of the *Saint Paul Dispatch and Pioneer Press*

Wednesday, April 24

Morning Session

A. M.

8:00 Visit Scientific and Technical Exhibits

8:30 Scientific Cinema.....North Room

Billroth No. 1 of the Stomach
WALTMAN WALTERS.....Rochester

9:00 **Cancer of the Breast**

Diagnosis
E. T. BELL.....University of Minnesota

Treatment by Radical Operation and by Radiation
M. W. ALBERTS.....Saint Paul

9:30 Therapeutic Indications for Use of Iron in Treatment of the Anemias
P. F. ECKMAN.....Duluth

9:45 Clinical and Surgical Aspects of Spreading Peritonitis Complicating Acute Perforative Appendicitis
JOHN O. BOWER.....Philadelphia, Pa.
Clinical Professor Surgical Research, Temple University

(Intermission)

10:15 Visit Demonstrations, Scientific and Technical Exhibits
Scientific Cinema.....North Room

The Ligation with Injection Treatment of Varicose Veins
H. O. MCPHEETERS .....Minneapolis

10:45 Installation of Officers

11:00 Prevention and Treatment of Genital Prolapse
FRED L. ADAIR.....Chicago, Ill.
Professor of Obstetrics and Gynecology, University of Chicago

11:30 Clinical Aspects of Vitamin B Deficiencies
NORMAN JOLLIFFE.....New York
Associate Professor of Medicine, New York University College of Medicine

12:15 **Round Table Luncheons**

Acute Abdominal Emergencies
JOHN O. BOWER.....Philadelphia

Causes and Prevention of Fetal and Neonatal Deaths
FRED L. ADAIR.....Chicago

Prevention of Vitamin Deficiencies in Patients Having Acute Medical and Surgical Diseases
NORMAN JOLLIFFE.....New York City

Otolaryngology in General Practice
L. R. BOIES.....Minneapolis

Health and Delinquency
E. K. CLARKE.....University of Minnesota
PAUL L. SCHROEDER.....Chicago

Refraction and Its Limitations for the General Practitioner
M. C. PFUNDER.....Minneapolis

Treatment of Heart Failure
J. F. BORG.....Saint Paul

Sex Hormones
C. D. CREEVY.....University of Minnesota
R. J. MOE.....Duluth

Management of Diseases of the Prostate
W. E. HATCH.....Duluth

Industrial Health
J. L. MCLEOD.....Grand Rapids

P. M.

1:30 Visit Demonstrations, Scientific and Technical Exhibits
Scientific Cinema.....North Room

Visual Testing in Children
W. H. FINK.....Minneapolis

2:15 **Progressive Loss of Vision**

Causes of Blindness in Minnesota
C. E. STANFORD.....Minneapolis

Glaucoma
A. C. HILDING.....Duluth

Senile Cataract
E. W. HANSEN.....Minneapolis

Squint in Relation to Loss of Vision
H. W. GRANT.....Saint Paul

3:15 **Child Psychiatry**

Common Behavior Problems in Pre-School Children
E. K. CLARKE.....University of Minnesota

Mental Hygiene in the School
S. A. CHALLMAN.....Minneapolis

Emotional Factors in Organic Disease
PAUL L. SCHROEDER.....Chicago
Criminologist, State of Illinois, and Director, Institute for Juvenile Research

---

There is too great a tendency to observe the early lesion in tuberculosis until progression has actually occurred, in which case the maximum opportunity for cure is lost. The purpose of treatment is not only to arrest the peripheral extension of the lesion but also to arrest the process of central caseation. Otherwise, even though temporary arrest may occur later, the central caseous residue constitutes a menace in future years.—J. Burns Amberson, Jr., M.D., Amer. Student Health Assn., Dec. 1939.

* * *

The steps which lead to the establishment of a former tuberculosis patient in a job are extremely important to the patient himself, to his family, to the people with whom he will be working and to the community at large. They are important to the patient because they may determine whether or not he will live. They are important to the patient's family and his future coworkers because, if his disease reactivates, he may infect them. The community is vitally concerned not only from the standpoint of preventing relapses with consequent infection of others, but also from the economic aspect of protecting the thousand or more dollars it has invested in treatment of the patient.—Mrs. Kathryne M. Pearce, Minneapolis, Minnesota.

MEDICAL BROADCAST FOR APRIL

The Minnesota State Medical Association Morning Health Service

The Minnesota State Medical Association broadcasts weekly at 11:00 o'clock every Saturday morning over Station WCCO, Minneapolis, Station WLB, University of Minnesota, and KDAL, Duluth.

Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota.

The program will be as follows:

April 6—Tumors of Stomach

April 13—Tumors of Bowel

April 20—Early Diagnosis of Tuberculosis.

April 27—Tumors of Mouth.

MAYO CLINIC WEEK

A clinicosurgical week under the direction of The Mayo Foundation will be held at Rochester, Minnesota, May 6 to 11, inclusive. A series of surgical clinics and discussions will be presented with particular emphasis on the treatment of cancer. Visiting physicians are invited to attend.

COURSE IN SURGICAL PATHOLOGY

A course in Surgical Pathology will be given at the University of Minnesota, Department of Pathology, during the first session of summer school, June 17 to July 26, 1940.

This course is designed to give a comprehensive review of the lesions shown in surgical specimens, special emphasis to be laid on the diagnosis of tumors, or lesions which may be confused with tumors. It is arranged according to systems, e.g., gynecology, skin, et cetera. Fixed gross material is used in parallel with slides. Fresh material, as available, is also employed, but obviously may not be strictly applicable to the day's work. X-rays are used in connection with the study of lesions of bones.

About one-third of each class period is devoted to demonstrations on the lantern to show special features. The daily class period is three hours, but for anyone who wishes to do extra work in some field material will be provided.

This course is open to anyone who has finished the regular medical course in pathology, but is especially intended for hospital pathologists and those who wish a course which may aid them in preparing for the examinations of the special boards. Establishment of a clinic in connection with this course is under consideration.

For further details write J. S. McCartney, M.D., Associate Professor of Pathology.

WABASHA COUNTY SOCIETY

A dinner meeting of the Wabasha County Medical Society was held at the Lake City Hospital on the evening of February 22, to which all physicians in the county and maternity staffs of all hospitals in the county were invited. Dr. B. A. Flesche of Lake City, the regularly appointed representative from this society, gave an outline and stressed the important points of the three-day course of instruction held at the University Center for Continuation Study, February 8, 9 and 10, on the care of the newborn with special reference to prematures.

There were eighteen in attendance, including doctors and nurses.

WASHINGTON COUNTY SOCIETY

The regular meeting of the Washington County Medical Society was held March 12, at the Stillwater Club Rooms.

Reports of the meeting of county medical society officers held in Saint Paul in February, dwelling on the care of the indigent and better methods of immunization, were given.

The committee in charge of obtaining donors for blood transfusions stated that members of Post 48, American Legion, will report at the Lakeview Memorial Hospital for grouping and will be on call in case of need.

The chairman of the fracture committee reported the Fracture Symposium of the Hennepin County Medical Society and the Minneapolis Surgical Society of March 7. He called attention to the two motion picture films owned by the Minnesota State Medical Association showing proper first aid and transportation technic for those suffering from fractures of the long bones and demonstrating treatment of fractures of the spine. It was suggested that these films be shown to local firemen, policemen, sheriffs and to any others who might be interested. It was also suggested that inquiry be made into local ambulance service and equipment.

Dr. E. M. Jones, of Saint Paul, gave an illustrated lecture on "The Gallbladder: Its Diseases, Symptomatology, Complications and Treatment." Dr. Jones, who is Counsellor for the Fifth District, discussed the subject of accepting to membership physicians located in neighboring counties, for whom attendance at the Washington County meetings would be more convenient.

PROCEEDINGS of the MINNESOTA ACADEMY OF MEDICINE

Meeting of February 14, 1940

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 14, 1940. Dinner was served at 7 o'clock and the meeting was called to order by the president, Dr. James Johnson, at 8:15 p. m.

There were forty-seven members and two guests present.

Minutes of the January meeting were read and approved.

Upon ballot the following men were elected as candidates for active membership in the Academy:

Dr. Philip Donohue and Dr. John Holt of Saint Paul, and Dr. William A. Hanson and Dr. O. S. Wyatt, of Minneapolis.

The scientific program followed.

DR. S. E. SWEITZER, Minneapolis, showed a general group of colored kodachrome pictures of skin diseases.

Discussion

DR. H. E. MICHELSON, Minneapolis: It is very difficut to discuss a presentation like Dr. Sweitzer's. We are only able to comment that his slides are very instructive, and that this Will Rogers of medicine has furnished us with much amusement. However, in spite of his facetious remarks, the work represented in this collection is great, and I am sure that as time goes on his collection will become more and more valuable.

LIP AND PALATE OPERATIONS

(Movies in color)

HARRY P. RITCHIE, M.D.

Saint Paul

Dr. Ritchie discussed some of the problems of repair of the congenital clefts of the face and jaw, showing movies in color of operations for several combinations of clefts of the lip, hard palate and soft palate. The main point of this presentation was that the principal thing in any given case, as they came in one after the other, is not the condition of the lip or the palate, but the condition of the alveolar process, whether it is normal or whether it is cleft. This fact has already been indirectly indicated since the beginning of the literature by the terms, "complete and incomplete cleft palate."

Through the interest and direction of Drs. Scammon, Boyden and Jackson of the Department of Anatomy and Embryology of the University of Minnesota, Dr. Ritchie has been able to demonstrate that, from an embryological viewpoint, the process is not a part of the palate but, on the other hand, is formed in relation to the lip. He pointed out that the only cleft requiring early treatment is the cleft in the process, because this cleft is in the bone, and it must receive attention as early as possible while the bone is soft and pliable. If the case with the cleft in the process is allowed to go beyond the three-month period, the bones become set in their cleft position and it becomes increasingly difficult to contact the edges. For several years, in the treatment of alveolar process clefts, Dr. Ritchie used the wires and plates suggested by Dr. Brophy, thus applying direct force to the bone. He has now completely and irrevocably discontinued such procedures, because there is no way of determining the amount of force applied to the individual case, with the result that the upper jaw is malformed, with malocclusion with the lower jaw on one side or the other. This produces a surgical deformity which sometimes seems worse than the congenital deformity. To substitute the plan, Dr. Ritchie now tries to get all the cases with alveolar process clefts as early as possible and he applies indirect force by means of adhesive straps and rubber bands, gradually narrowing the cleft in the process by indirect force, with most satisfactory results. So soon as the process cleft can be narrowed down 4 to 6 m.m. in width, the lip is done over the process cleft to complete the closure.

Another advance in recent years has been the operation in which the front part of the hard palate is closed at the same time as the lip. This can only be done to the extent of two or three stitches but it does facilitate the subsequent repair of the hard and soft palates, which is usually done some time in the second year.

The lip operation was shown as performed in two ways: first, by electrical stimulation of the muscle bundles of the orbicularis oris, puckering these up to find the lower bundles at the vermilion border and the upper bundles at the base of the ala. These were then sutured together, supplemented by a third stitch between the upper and lower stitches, thus burying the stitches in the body of the lip, and tying them on the mucous membrane side. The same operation was then done by the use of calipers, taking as a starting point an obtuse angle which always is present in unilateral clefts, this point being the natural union of the prolabium of the fronto-nasal process and the maxillary process, right or left, to which it is normally united. Dr. Ritchie believes that the lip can be done without either electrical stimulation or calipers, because he believes that the position of the muscle bundles is always indicated by markings on the skin of the lip.

The bilateral cleft of the lip was shown in which one side is done at one sitting, making an effort to bring the muscle bundles of the lateral maxillary process to the midline of the prolabium, in which there is no muscle tissue. Then, at a period of six weeks to two months, the other side is done, making an effort to bring the muscle bundles of that side to the midline of the prolabium. Both sides of the bilateral lip being done at one sitting has now been discarded, because of the great precision and the time of operation required

to make proper contact. The prolabium of the frontonasal process is then placed in the body of the lip. This is a point of procedure upon which there is still no agreement. In support of the plan, Dr. Ritchie presented a case of cleft lip in which everything had completely united except a few muscle bundles on the left side which had failed to contact, being attached only to the skin margins and causing a line of depression in the skin, just the markings of the normal line of union. The outlines of the prolabium in this case were very evident and showed that it was a part of the normal lip and that the vermilion border of the prolabium was a part of the vermilion border of the normal lip.

Discussion

DR. ARNOLD SCHWYZER, Saint Paul: I don't know that I feel prepared to discuss these beautiful pictures except that I want to congratulate Dr. Ritchie on having made and shown them. This is a very special field and it takes a special dexterity to do these things. Dr. Ritchie several times has shown, when I saw him work, an extraordinary dexterity. I cannot help saying, though, that it is a little difficult always to see well when you have moving pictures in surgery. These are probably as good as any I have seen. Evidently the big field for colored pictures is dermatology, for they must be wonderful for teaching purposes.

The meeting adjourned.

A. G. SCHULZE, M.D., *Secretary.*

WOMEN'S AUXILIARY

MRS. A. C. BAKER, Fergus Falls, *President*
MRS. E. V. GOLTZ, 2259 Summit Avenue,
Saint Paul, *Publicity Chairman*

At the regular meeting of the *Washington County* Auxiliary held at the home of Mrs. E. Sydney Boleyn, plans were made for the completion of a poster showing the progress of the auxiliary during the year. This poster will be sent to the state meeting which will be held in Rochester, Minnesota, in April.

Park Region Auxiliary and Medical Society held a joint meeting in Fergus Falls at the State hospital, Wednesday, February 14. About seventy-five attended the dinner, after which members of the Auxiliary adjourned to the home of Dr. and Mrs. W. L. Patterson for their business session. The annual meeting of the Auxiliary will be held in April, when a new president will be elected.

The *Renville County* Auxiliary met for their February session with the following members attending: Mrs. R. Madland and Mrs. C. Hartman of Fairfax, Mrs. J. Dordahl of Sacred Heart, Mrs. R. Adams of Bird Island, Mrs. G. H. Mesker, Mrs. A. A. Passer and Mrs. J. A. Cosgriff of Renville. A book review was given by Mrs. Dordahl of Sacred Heart.

Mrs. D. G. Mahle of Plainview, Minnesota, was elected president of the *Wabasha County* Medical Auxiliary at the annual meeting held at the home of Mrs. C. G. Ochsner. Mrs. Mahle succeeds Mrs. B. A. Flesche of Lake City. The newly elected vice president is Mrs. B. J. Bouquet of Wabasha and the new secretary and treasurer is Mrs. M. J. Campion of Lake City. Mrs. Race of Plainview was named scrapbook chairman. Following the election a luncheon was served.

The *Winona County* Auxiliary will send their newly elected president to the annual state meeting to be held in Rochester in April. This Auxiliary will hold their annual meeting in April. A recent meeting was called by the President, Mrs. H. W. Satterlee of Lewiston, and was followed by a luncheon held at the Garden Gate and attended by sixteen members. The Winona Auxiliary has contributed this year to the school milk fund and to the purchase of *Hygeia,* which was donated to three Winona high schools and the high schools of Rollingstone, Lewiston and St. Charles. The Auxiliary has been very active this year in the Cancer Campaign.

Have you made your hotel reservation for the 18th Annual Convention of the Woman's Auxiliary to the American Medical Association, which will be held in New York City, June 10 to 14, 1940? Headquarters are at the Hotel Pennsylvania and we are sure you will not want to miss this convention, which promises to be an outstanding one. *Mail Your Reservation Today* to Dr. Peter Irving, Housing Bureau, Room 1036, 233 Broadway, New York City.

* * *

The *Hennepin County* Auxiliary held its last regular meeting March 1, when the group entertained members of other Auxiliaries of the state. A talk on "Spring Gardens" by Mr. Rodney Kelley was given with illustrated moving pictures.

The annual Easter Monday card party will be held on March 25. Money from this is used for philanthropic needs with the larger part of the money raised used for the personal needs of the extuberculosis patients who are living at Sarahurst—the boarding home supported by the Christmas Seal Sale. Contributions are made each year to the upkeep of "our room" which houses three girls. The parties each year are held in private homes as well as in the Medical Library. The following members will open their homes: Mmes. E. D. Anderson, E. W. Bedford, E. G. Benjamin, James Blake, L. R. Boies, A. E. Cardle, J. B. Carey, R. R. Cranmer, C. D. Creevy, Peter E. Peterson, E. T. Evans, G. M. Hall, W. K. Haven, E. C. Henrikson, R. T. LaVake, C. O. Maland, Russell Morse, J. A. Myers, E. G. Oppen. The general chairman for these parties is Mrs. L. S. Arling.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

NEWER NUTRITION IN PEDIATRIC PRACTICE. I. Newton Kugelmass, B.S., M.A., M.D., Ph.D., Sc.D. Attending Pediatrician, Broad St. Hospital and Heckscher Institute, New York; Consulting Pediatrician Lynn Memorial Hospital, Monmouth Memorial Hospital and Muhlenberg Hospital, New Jersey, etc. 1155 pages. Illus. Price, cloth, $10.00. Philadelphia: J. B. Lippincott Co., 1940.

THE MANAGEMENT OF OBSTETRIC DIFFICULTIES. Paul Titus, M.D. Obstetrician and Gynecologist to St. Margaret Memorial Hospital, Pittsburgh; Consulting Obstetrician and Gynecologist, Pittsburgh City Homes and Hospital, Mayview, and to Homestead Hospital, Homestead, Pa. Secretary, American Board of Obstetrics and Gynecology. 968 pages. Illus. Price, cloth, $10.00 St. Louis: C. V. Mosby Co., 1940.

TEN YEARS IN THE CONGO. W. E. Davis, M.D. 301 pages. Price, cloth, $2.50. New York: Reynal & Hitchcock, 1940.

HEIL HUNGER! Health under Hitler. Dr. Martin Gumpert. Translated from the German by Maurice Samuel. 129 pages. Price, cloth, $1.75. New York: Alliance Book Corporation, 1940.

NON-PROFIT HOSPITAL SERVICE PLANS. C. Rufus Rorem, Ph.D., C.P.A. Director, Commission on Hospital Service, American Hospital Assn., Chicago. 130 pages. Price, paper cover, single copies 50c each; lots of 4 to 10, 25c each; 11 or more, 15c each. Chicago: Commission on Hospital Service, 1940.

SHOCK—Blood Studies as a Guide to Therapy. John Scudder, M.D., Med. Sc.D., F.A.C.S. From the Surgical Pathology Laboratory of the College of Physicians and Surgeons, Columbia University, and Department of Surgery, Presbyterian Hospital, New York City. 315 pages. Illus. Price, cloth, $5.50. Philadelphia: J. B. Lippincott Co., 1940.

PNEUMOCONIOSIS—The Story of Dusty Lungs. A Preliminary Report. Lewis Gregory Cole, M.D., Director of Silicotic Research, John B. Pierce Foundation, New York, and William Gregory Cole, M.D. 100 pages. Illus. Price, cloth, $1.00. New York: John B. Pierce Foundation, 1940.

PRECLINICAL MEDICINE. Malford W. Thewlis, M.D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York City; Special Consultant, Rhode Island Department of Health; Associate Editor, Medical Times (New York), etc. 223 pages. Illus. Price, cloth, $3.00. Baltimore: Williams & Wilkins Co., 1940.

GOOD HEALTH AND BAD MEDICINE. A Family Medical Guide. Harold Aaron, M.D., Medical Consultant to Consumers Union of United States, Inc. 328 pages. Price, cloth, $3.00. New York: Robert M. McBride & Co., 1940.

PHYSICAL DIAGNOSIS (Elmer and Rose). Eighth Edition. Revised by Harry Walker, M.D., F.A.C.P. Associate Professor of Medicine, Medical College of Virginia, Richmond, Va. 792 pages. Illus. Price, cloth, $8.75. St. Louis: C. V. Mosby Co., 1940.

ESSENTIALS OF THE DIAGNOSTIC EXAMINATION. John B. Youmans, B.A., M.S., M.D. Associate Professor of Medicine and Director of Postgraduate Instruction, Vanderbilt University Medical School. 417 pages. Illus. Price, cloth, $3.00. New York: The Commonwealth Fund, 1940.

DISEASES OF THE NOSE AND THROAT. Charles J. Imperatori, M.D., and Herman J. Burman, M.D. 2nd edition. 726 pages. Illus. Price, $7.00. Philadelphia: J. B. Lippincott Company, 1939.

Though the first edition is only three years old, the authors have seen fit to issue a second edition of this work. This evidences a desire to keep the book abreast of recent advances in this field. Considerable new material is found in this second edition. Of this may be mentioned the newer knowledge of nasal allergy. The authors have also given attention to recent work on the physiology of the nose in bringing this section up to date. Acute laryngo-tracheo-bronchitis, a recently recognized entity, is discussed.

The same style and arrangement is followed which renders the material readily available. The paper and type are the best. The authors have followed their original plan of omitting controversial material and presenting salient facts and proven methods of therapy with little or no critical comment of other methods.

Though originally presented in the form of lectures for students, the book is a handy reference work for the practicing rhinologist and laryngologist.—A.G.A.

PSYCHOBIOLOGY AND PSYCHIATRY. A Textbook of Normal and Abnormal Human Behavior. Wendell Muncie, M.D., Associate Professor of Psychiatry, Johns Hopkins, University; Assistant Psychiatrist, Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital. Pp. 729. Illus. 69. Price $8.00. St. Louis: C. V. Mosby Company.

The author is a member of the staff of the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital. Dr. Adolph Meyer, Director of the Clinic, introduces the book with a foreword; he commends the author of the text because "he would also formulate best what he actually finds in his patients and uses in his teaching and in the service of therapy." In view of the fact that many workers in the field of psychiatry have for

some years past anticipated a textbook exposition by the eminent Director of the Clinic, the following excerpt in the Preface by Muncie is of interest: "This book . . . attempts to give a fair account of the conceptions, teaching and working methods of the Clinic as currently constituted." The text is aimed primarily for the use of students.

Contents are divided into four parts. In the first chapter of Part I the Historical and Philosophical Bases of Psychobiology are outlined. The other three chapters, comprising a total of 92 pages, deal with the Student's Personality Study. Then follow nine chapters in Part II devoted to Pathology and Psychiatry. Part III concerns Treatment and Part IV is given over to Historical Survey in Bibliography of the Development of the Concepts underlying the Principal Reaction Sets. This last part comprises 182 pages, almost a fourth of the text, a rather liberal space allotment it would seem.

The textbook contains 69 illustrations and an ample index; it deserves recognition as a valuable addition to American psychiatric literature.

J. C. MICHAEL, M.D.

POPULATION, RACE, AND EUGENICS. Morris Siegel, M.D. Published by the author, 546 Barton Street, Hamilton, Ontario, 1939. 206 pages. Price $3.00.

This book is of interest to laymen and the profession alike, although medical men may question some of the statements made. For instance, epilepsy, in the light of recent advances in this field, is hardly a good reason for sterilization. The classification of feeblemindedness is arbitrarily based on the I.Q., which, taken alone, is a doubtful criterion. The number of mentally deranged in this country as given seems to be too high.

More in conformity with the opinion of the best authorities is the chapter on Race. The theory of Nordic superiority based on the pseudo-scientific works of Gobineau and Houston Chamberlain, is refuted. There is no pure race. The cultural heritage of the present day dates back to the Greeks and Romans, and certainly not to the wild nordic tribes. In the Middle Ages, the cultural advances were due to the Moors and Arabs, while the Rennaisance was born in the Mediterranean countries.

With regard to population, the author calls attention to the fact that, while the birth rate in this country, as elsewhere, is falling, it is solely at the expense of the cultured urban population. The reproduction in the agricultural regions and among the poor and uneducated in the cities is abnormally high. Since mental derangement and criminality are both affected by environmental factors, it follows that the nation, while being depopulated, becomes tainted at the same time with unfit. Sterilization alone cannot cope with the situation.

Hence, the author advocates restricted marriage, segregation of the unfit during the entire reproductive period for women, and, above all, social reforms such as abolition of slums, broad education for the masses, and other measures of equal importance.

M. L. ZLATORSKI, M.D.

MINNESOTA STATE MEDICAL ASSOCIATION

ROSTER 1940

OFFICERS

B. S. Adams, M.D.	*President*	Hibbing
C. M. Johnson, M.D.	*First Vice President*	Dawson
A. E. Cardle, M.D.	*Second Vice President*	Minneapolis
B. B. Souster, M.D.	*Secretary*	St. Paul
W. H. Condit, M.D.	*Treasurer*	Minneapolis
George Earl, M.D.	*Past President*	St. Paul
W. W. Will, M.D.	*Speaker, House of Delegates*	Bertha
E. A. Meyerding, M.D.	*Vice Speaker, House of Delegates*	St. Paul
R. R. Rosell	*Executive Secretary*	St. Paul

COUNCILORS*

First District
H. Z. Giffin, M.D. (1941).....Rochester

Second District
L. L. Sogge, M.D. (1941).....Windom

Third District
B. J. Branton, M.D. (1940).....Willmar

Fourth District
A. E. Sohmer, M.D. (1942).....Mankato

Fifth District
E. M. Jones, M.D. (1940).....St. Paul

Sixth District
C. A. Stewart, M.D. (1942).....Minneapolis

Seventh District
E. J. Simons, M.D. (1940).....Swanville

Eighth District
W. L. Burnap, M.D. (1942).....Fergus Falls

Ninth District
F. J. Elias, M.D. (1941).....Duluth

HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION*

Members
W. A. Coventry, M.D. (1940).....Duluth
W. F. Braasch, M.D. (1940).....Rochester
F. J. Savage, M.D. (1941).....St. Paul

Alternates
J. C. Hultkrans, M.D. (1940).....Minneapolis
W. L. Burnap, M.D. (1940).....Fergus Falls
J. M. Hayes, M.D. (1941).....Minneapolis

MINNESOTA STATE CERTIFICATION BOARD FOR PUBLIC HEALTH NURSING

E. J. Simons, M.D.....Swanville

SCIENTIFIC COMMITTEES

COMMITTEE ON SCIENTIFIC ASSEMBLY

B. S. Adams, M.D., General Chairman.....Hibbing
George Earl, M.D.....St. Paul
W. A. O'Brien, M.D.....Minneapolis
R. R. Rosell.....St. Paul

SECTION ON MEDICINE

J. A. Myers, M.D.....Minneapolis
H. C. Habein, M.D.....Rochester

SECTION ON SURGERY

F. H. Magney, M.D.....Duluth
O. W. Holcomb, M.D.....St. Paul

SECTION ON SPECIALTIES

L. R. Gowan, M.D.....Duluth
J. W. Gamble, M.D.....Albert Lea

LOCAL ARRANGEMENTS

F. J. Heck, M.D.....Rochester

COMMITTEE ON CANCER*

M. W. Alberts, M.D. (1942).....St. Paul
W. A. O'Brien, M.D. (ex-officio).....Minneapolis
Herbert Boysen, M.D. (1940).....Welcome
O. J. Campbell, M.D. (1942).....Minneapolis
A. G. Chadbourn, M.D. (1941).....Heron Lake
H. C. Cooney, M.D. (1940).....Princeton
B. J. Gallagher, M.D. (1942).....Waseca
O. J. Hagen, M.D. (1942).....Moorhead
R. S. Hegge, M.D. (1940).....Austin
J. R. Kuth, M.D. (1941).....Duluth
Martin Nordland, M.D. (1942).....Minneapolis
H. E. Robertson, M.D. (1941).....Rochester
J. A. Slocumb, M.D. (1940).....Plainview
Waltman Walters, M.D. (1940).....Rochester
H. B. Zimmermann, M.D. (1941).....St. Paul

*Terms expire December 31, of year indicated.

COMMITTEES ON INDUSTRIAL HEALTH

1. Committee on Fractures
R. C. Webb, M.D., *General Chairman*.....Minneapolis

Executive
R. C. Webb, M.D.....Minneapolis
R. B. Bray, M.D.....Biwabik
H. D. Burns, M.D.....Albert Lea
H. W. Goehrs, M.D.....St. Cloud
V. P. Hauser, M.D.....St. Paul
J. R. Kuth, M.D.....Duluth
J. J. Morrow, M.D.....Austin
M. O. Oppegaard, M.D.....Crookston
W. C. Stillwell, M.D.....Mankato
A. L. Vadheim, M.D.....Tyler
Nels Westby, M.D.....Madison
O. W. Yoerg, M.D.....Minneapolis

2. Committee on Asphyxia and Asphyxial Death
W. M. Boothby, M.D.....Rochester
J. V. Carlson, M.D.....Westbrook
A. G. Chadbourn, M.D.....Heron Lake
I. J. Heimark, M.D.....Fairmont
E. A. Kilbride, M.D.....Worthington
R. T. Knight, M.D.....Minneapolis
I. S. Lundy, M.D.....Rochester
E. B. Tuohy, M.D.....Rochester
I. B. Vail, M.D.....Henning
H. E. Wilmot, M.D.....Litchfield

3. Committee on Industrial Hygiene and Occupational Diseases
J. L. McLeod, M.D.....Grand Rapids
L. S. Arling, M.D.....Minneapolis
G. L. Berdez, M.D.....Duluth
T. G. Clement, M.D.....Duluth
W. S. Lemon, M.D.....Rochester
T. A. Lowe, M.D.....South St. Paul
I. A. Myers, M.D.....Minneapolis
L. G. Rigler, M.D.....Minneapolis
S. E. Sweitzer, M.D.....Minneapolis
O. H. Wangensteen, M.D.....Minneapolis
A. E. Wilcox, M.D.....Minneapolis

COMMITTEE ON DIABETES

A. H. Beard, M.D. ..... Minneapolis
S. H. Boyer, Jr., M.D. ..... Duluth
E. L. Gardner, M.D. ..... Minneapolis
W. H. Halloran, M.D. ..... Jackson
E. T. Herrmann, M.D. ..... St. Paul
R. C. Hunt, M.D. ..... Fairmont
J. R. Meade, M.D. ..... St. Paul
L. L. Merriman, M.D. ..... Duluth
F. H. Rynearson, M.D. ..... Rochester
R. M. Wilder, M.D. ..... Rochester

HEART COMMITTEE

D. W. Wheeler, M.D. ..... Duluth
A. R. Barnes, M.D. ..... Rochester
H. E. Binet, M.D. ..... Grand Rapids
J. F. Borg, M.D. ..... St. Paul
T. J. Dry, M.D. ..... Rochester
C. N. Hensel, M.D. ..... St. Paul
F. R. Huxley, M.D. ..... Faribault
A. C. Kerkhof, M.D. ..... Minneapolis
R. L. Nelson, M.D. ..... Duluth
H. L. Ulrich, M.D. ..... Minneapolis

COMMITTEE ON SYPHILIS AND SOCIAL DISEASES

W. E. Hatch, M.D. ..... Duluth
C. D. Freeman, M.D. ..... St. Paul
H. G. Irvine, M.D. ..... Minneapolis
F. W. Lynch, M.D. ..... St. Paul
J. F. Madden, M.D. ..... St. Paul
H. E. Michelson, M.D. ..... Minneapolis
M. A. Nicholson, M.D. ..... Duluth
P. A. O'Leary, M.D. ..... Rochester
C. L. Roholt, M.D. ..... Waverly
E. Z. Shapiro, M.D. ..... Duluth

COMMITTEE ON DEAFNESS PREVENTION AND AMELIORATION

Horace Newhart, M.D. ..... Minneapolis
W. L. Burnap, M.D. ..... Fergus Falls
C. E. Connor, M.D. ..... St. Paul
F. E. Harrington, M.D. ..... Minneapolis
E. A. Loomis, M.D. ..... Minneapolis
H. A. Roust, M.D. ..... Montevideo
J. T. Schlesselman, M.D. ..... Mankato
Andrew Sinamark, M.D. ..... Hibbing
G. E. Strate, M.D. ..... St. Paul
D. L. Tilderquist, M.D. ..... Duluth
G. H. Walker, M.D. ..... Winona

COMMITTEE ON OPHTHALMOLOGY

J. S. Reynolds, M.D. ..... Minneapolis
W. L. Benedict, M.D. ..... Rochester
J. C. Brown, M.D. ..... St. Paul
E. P. Burch, M.D. ..... St. Paul
T. R. Fritsche, M.D. ..... New Ulm
A. D. Prangen, M.D. ..... Rochester
R. A. Salter, M.D. ..... Virginia
J. L. Shellman, M.D. ..... St. Paul
F. F. Slyfield, M.D. ..... Duluth
G. E. Strout, M.D. ..... Minneapolis

COMMITTEE ON HOSPITALS AND MEDICAL EDUCATION

A. H. Wells, M.D. ..... Duluth
D. C. Balfour, M.D. ..... Rochester
R. L. Bowen, M.D. ..... Hibbing
A. F. Branton, M.D. ..... Willmar
A. E. Cardle, M.D. ..... Minneapolis
H. S. Diehl, M.D. ..... Minneapolis
C. E. Lyght, M.D. ..... Northfield
N. D. Smith, M.D. ..... Rochester
H. N. Sutherland, M.D. ..... Ely
W. H. Valentine, M.D. ..... Tracy
E. E. Webber, M.D. ..... Duluth

SUB-COMMITTEE ON PUBLIC HEALTH NURSING

C. A. Scherer, M.D. ..... Duluth
J. K. Anderson, M.D. ..... Minneapolis
H. W. Jones, M.D. ..... Minneapolis
A. G. Liedloff, M.D. ..... Mankato
S. P. McDaniel, M.D. ..... Virginia
O. F. Mellby, M.D. ..... Thief River Falls
I. L. Oliver, M.D. ..... Graceville
S. J. Smith, M.D. ..... Eveleth
R. B. Tweedy, M.D. ..... Winona
M. E. Withrow, M.D. ..... International Falls

COMMITTEE ON MATERNAL WELFARE

R. J. Moe, M.D. ..... Duluth
C. J. Ehrenberg, M.D. ..... Minneapolis
E. C. Hartley, M.D. ..... St. Paul
A. B. Hunt, M.D. ..... Rochester
J. R. Manley, M.D. ..... Duluth
J. L. McKelvey, M.D. ..... Minneapolis
R. D. Mussey, M.D. ..... Rochester
W. H. Rumpff, M.D. ..... St. Cloud
J. H. Simons, M.D. ..... Minneapolis
J. J. Swendson, M.D. ..... St. Paul

COMMITTEE ON MILITARY AFFAIRS

Col. F. L. Smith ..... Rochester
Lt. Col. J. J. Catlin ..... Buffalo
Lt. C. J. Fritsche ..... New Ulm
Col. R. T. Knight ..... Minneapolis
Lt. Col. E. H. Marcum ..... Bemidji
Lt. Comdr. Donald McCarthy ..... Minneapolis
Major J. J. Morrow ..... Austin
Lt. Col. W. G. Workman ..... Tracy

HISTORICAL COMMITTEE

J. M. Armstrong, M.D. ..... St. Paul
H. B. Annis, M.D. ..... Minneapolis
Richard Bardon, M.D. ..... Duluth
Charles Bolsta, M.D. ..... Ortonville
L. E. Claydon, M.D. ..... Red Wing
Olga Hansen, M.D. ..... Minneapolis
M. C. Piper, M.D. ..... Rochester
G. E. Sherwood, M.D. ..... Kimball
C. G. Watson, M.D. ..... Soudan

COMMITTEE ON VACCINATION AND IMMUNIZATION

L. R. Critchfield, M.D. ..... St. Paul
L. C. Barr, M.D. ..... Albert Lea
H. M. Blegen, M.D. ..... Warren
A. J. Chesley, M.D. ..... St. Paul
M. McC. Fischer, M.D. ..... Duluth
L. H. Flanchier, M.D. ..... Lake Park
E. J. Huenekens, M.D. ..... Minneapolis
R. J. Kennedy, M.D. ..... Rochester
E. A. Kilbride, M.D. ..... Worthington
T. B. Magath, M.D. ..... Rochester
S. H. Stuurmans, M.D. ..... Erskine

COMMITTEE TO STUDY MOTOR VEHICLE ACCIDENTS

J. C. Hultkrans, M.D. ..... Minneapolis
Kano Ikeda, M.D. ..... St. Paul
A. E. Osterberg, M.D. ..... Rochester
D. D. Turnacliff, M.D. ..... Minneapolis
M. B. Visscher, M.D. (ex officio) ..... Minneapolis
F. W. Whitmore, M.D. ..... St. Paul

COMMITTEE TO STUDY PSYCHOPATHIC PERSONALITIES

G. R. Kamman, M.D. ..... St. Paul
A. G. Dumas, M.D. ..... Minneapolis
L. R. Gowan, M.D. ..... Duluth
R. C. Gray, M.D. ..... Minneapolis
J. C. McKinley, M.D. ..... Minneapolis
F. P. Moersch, M.D. ..... Rochester
W. L. Patterson, M.D. ..... Fergus Falls
G. N. Ruhberg, M.D. ..... St. Paul

NON-SCIENTIFIC COMMITTEES

COMMITTEE ON PUBLIC POLICY

L. L. Sogge, M.D. ..... Windom
G. I. Badeaux, M.D. ..... Brainerd
L. A. Barney, M.D. ..... Duluth
J. F. DuBois, M.D. ..... Sauk Center
E. A. Eberlin, M.D. ..... Glenwood
R. C. Gray, M.D. ..... Minneapolis
W. A. Fansler, M.D. ..... Minneapolis
H. C. Habein, M.D. ..... Rochester
J. M. Hayes, M.D. ..... Minneapolis
M. O. Oppegaard, M.D. ..... Crookston
W. C. Rutherford, M.D. ..... St. Paul
H. R. Tregilgas, M.D. ..... South St. Paul
C. B. Wright, M.D. ..... Minneapolis

INTERPROFESSIONAL RELATIONSHIP COMMITTEE

J. M. Hayes, M.D. ..... Minneapolis
E. C. Bayley, M.D. ..... Lake City
F. G. Benn, M.D. ..... Minneapolis
F. F. Callahan, M.D. ..... Pokegama
G. R. Kamman, M.D. ..... St. Paul
O. O. Larsen, M.D. ..... Detroit Lakes
C. W. Mayo, M.D. ..... Rochester
G. C. MacRae, M.D. ..... Duluth
E. M. McLaughlin, M.D. ..... Winona
A. A. Passer, M.D. ..... Olivia
C. E. Proshek, M.D. ..... Minneapolis
F. J. Savage, M.D. ..... St. Paul

COMMITTEE ON UNIVERSITY RELATIONS

George Earl, M.D. ..... St. Paul
J. M. Hayes, M.D. ..... Minneapolis
A. W. Adson, M.D. ..... Rochester
W. W. Will, M.D. ..... Bertha
W. A. Coventry, M.D. ..... Duluth

EDITING AND PUBLISHING COMMITTEE*

E. M. Hammes, M.D. (1941) ..... St. Paul
T. G. Clement, M.D. (1944) ..... Duluth
P. F. Donohue, M.D. (1943) ..... St. Paul
H. W. Meyerding, M.D. (1944) ..... Rochester
B. O. Mork, Jr., M.D. (1941) ..... Worthington
C. L. Oppegaard, M.D. (1940) ..... Crookston
T. A. Peppard, M.D. (1942) ..... Minneapolis
O. W. Rowe, M.D. 1942) ..... Duluth
Waltman Walters, M.D. (1943) ..... Rochester
C. B. Wright, M.D. (1940) ..... Minneapolis

COMMITTEE ON PUBLIC HEALTH EDUCATION

E. L. Tuohy, M.D., *General Chairman* ..... Duluth

Executive

E. L. Tuohy, M.D. ..... Duluth
R. M. Burns, M.D. ..... St. Paul
R. M. Hewitt, M.D. ..... Rochester
R. L. J. Kennedy, M.D. ..... Rochester
F. H. Magney, M.D. ..... Duluth
J. A. Myers, M.D. ..... Minneapolis
A. B. Stewart, M.D. ..... Owatonna

Child Welfare

R. L. J. Kennedy, M.D. ..... Rochester
A. J. Chesley, M.D. ..... St. Paul
H. S. Diehl, M.D. ..... Minneapolis
P. F. Dwan, M.D. ..... Minneapolis
B. J. Gallagher, M.D. ..... Waseca
J. S. Grogan, M.D. ..... Wadena
F. G. Hedenstrom, M.D. ..... St. Paul
H. F. Helmholz, M.D. ..... Rochester
C. D. Lufkin, M.D. ..... Northfield
R. E. Nutting, M.D. ..... Duluth

Radio

R. M. Burns, M.D. ..... St. Paul
J. K. Anderson, M.D. ..... Minneapolis
R. N. Andrews, M.D. ..... Mankato
S. H. Boyer, Jr., M.D. ..... Duluth
P. M. Gamble, M.D. ..... Albert Lea
C. N. Harris, M.D. ..... Hibbing
E. A. Heiberg, M.D. ..... Fergus Falls
R. N. Jones, M.D. ..... St. Cloud
M. C. Piper, M.D. ..... Rochester
E. D. Risser, M.D. ..... Winona

Speakers Bureau

F. H. Magney, M.D. ..... Duluth
C. C. Allen, M.D. ..... Austin
R. M. Burns, M.D. ..... St. Paul
L. A. Hilger, M.D. ..... St. Paul
P. J. Hiniker, M.D. ..... LeSueur
J. F. Norman, M.D. ..... Crookston
L. R. Prins, M.D. ..... Albert Lea
R. C. Radabaugh, M.D. ..... Hastings
C. P. Robbins, M.D. ..... Winona
T. W. Weum, M.D. ..... Minneapolis

Editorial

R. M. Hewitt, M.D. ..... Rochester
B. J. Branton, M.D. ..... Willmar
B. R. Karn, M.D. ..... Ortonville
W. A. Kennedy, M.D. ..... St. Paul
J. A. Myers, M.D. ..... Minneapolis
Ivar Sivertsen, M.D. ..... Minneapolis

First Aid and Red Cross

A. B. Stewart, M.D. ..... Owatonna
H. F. Bayard, M.D. ..... Minneapolis
W. C. Chambers, M.D. ..... Blue Earth
D. H. Garlock, M.D. ..... Bemidji
A. Gullixson, M.D. ..... Albert Lea
A. J. Lewis, M.D. ..... Henning
B. A. Smith, M.D. ..... Crosby
E. R. Sterner, M.D. ..... St. Paul
W. G. Strobel, M.D. ..... Duluth
C. E. Watz, M.D. ..... St. Paul

Tuberculosis

J. A. Myers, M.D. ..... Minneapolis
W. D. Beadie, M.D. ..... Cannon Falls
L. V. Berghs, M.D. ..... Owatonna
C. F. Ewing, M.D. ..... Wheaton
L. H. Flancher, M.D. ..... Lake Park
E. K. Geer, M.D. ..... St. Paul
A. J. Henderson, M.D. ..... Kiester
W. S. Hitchings, M.D. ..... Lakefield
E. A. Meyerding, M.D. ..... St. Paul
K. H. Pfuetze, M.D. ..... Nopeming
C. L. Scofield, M.D. ..... Benson
S. A. Slater, M.D. ..... Worthington

*Terms expire December 31, of year indicated.

COMMITTEE ON MEDICAL ECONOMICS

W. F. Braasch, M.D., *General Chairman* ..... Rochester

Executive

W. F. Braasch, M.D. ..... Rochester
A. W. Adson, M.D. ..... Rochester
S. H. Baxter, M.D. ..... Minneapolis
B. J. Branton, M.D. ..... Willmar
L. A. Buie, M.D. ..... Rochester
W. A. Coventry, M.D. ..... Duluth
F. A. Olson, M.D. ..... Minneapolis
L. L. Sogge, M.D. ..... Windom
T. H. Sweetser, M.D. ..... Minneapolis
E. L. Tuohy, M.D. ..... Duluth

Editorial

W. F. Braasch, M.D. ..... Rochester
A. R. Barnes, M.D. ..... Rochester
A. N. Collins, M.D. ..... Duluth
Lennox Danielson, M.D. ..... Litchfield
E. A. Meyerding, M.D. ..... St. Paul
E. S. Platou, M.D. ..... Minneapolis

Professional Education in Medical Ethics and Social and Economic Trends

L. A. Buie, M.D. ..... Rochester
R. H. Creighton, M.D. ..... Minneapolis
H. S. Diehl, M.D. ..... Minneapolis
E. W. Hansen, M.D. ..... Minneapolis
J. N. Libert, M.D. ..... St. Cloud
B. F. Smith, M.D. ..... Rochester
J. J. Swendson, M.D. ..... St. Paul
R. H. Wilson, M.D. ..... Winona

Medical Advisory

B. J. Branton, M.D. ..... Willmar
W. L. Burnap, M.D. ..... Fergus Falls
W. H. Hengstler, M.D. ..... St. Paul

State Health Relations

T. H. Sweetser, M.D. ..... Minneapolis
E. S. Boleyn, M.D. ..... Stillwater
W. S. Broker, M.D. ..... Wadena
J. N. Dunn, M.D. ..... St. Paul
C. L. Haney, M.D. ..... Duluth
W. E. Hart, M.D. ..... Monticello
H. E. Hilleboe, M.D. ..... St. Paul
C. M. Johnson, M.D. ..... Dawson
J. P. McDowell, M.D. ..... St. Cloud
J. L. McLeod, M.D. ..... Grand Rapids
S. A. Slater, M.D. ..... Worthington
E. L. Tuohy, M.D. ..... Duluth

Low Income and Indigent Problems

W. A. Coventry, M.D. ..... Duluth
V. S. Counseller, M.D. ..... Rochester
B. O. Mork, Jr., M.D. ..... Worthington
I. L. Oliver, M.D. ..... Graceville
C. L. Oppegaard, M.D. ..... Crookston
A. K. Stratte, M.D. ..... Pine City
L. I. Younger, M.D. ..... Winona
A. H. Zachman, M.D. ..... Melrose

Sickness Insurance

A. W. Adson, M.D. ..... Rochester
E. D. Anderson, M.D. ..... Minneapolis
L. A. Buie, M.D. ..... Rochester
R. R. Cranmer, M.D. ..... Minneapolis
O. W. Holcomb, M.D. ..... St. Paul
G. C. MacRae, M.D. ..... Duluth
O. I. Sohlberg, M.D. ..... St. Paul
W. W. Will, M.D. ..... Bertha

Industrial Relations

S. H. Baxter, M.D. ..... Minneapolis
S. H. Boyer, Sr., M.D. ..... Duluth
W. H. Cole, M.D. ..... St. Paul
G. R. Dunn, M.D. ..... Minneapolis
W. N. Graves, M.D. ..... Duluth
R. C. Hunt, M.D. ..... Fairmont
Clarence Jacobson, M.D. ..... Chisholm
E. M. Jones, M.D. ..... St. Paul
H. B. Macey, M.D. ..... Rochester

Contract Practice

F. A. Olson, M.D. ..... Minneapolis
N. H. Baker, M.D. ..... Fergus Falls
J. C. Hultkrans, M.D. ..... Minneapolis
P. C. Leck, M.D. ..... Austin
R. F. McGandy, M.D. ..... Minneapolis
E. N. Peterson, M.D. ..... Eveleth

CONTACT COMMITTEES

AITKIN COUNTY
J. J. Ratcliffe, M.D. ..... Aitkin
C. E. Carlson, M.D. ..... Aitkin
H. T. Petraborg, M.D. ..... Aitkin

ANOKA COUNTY
R. J. Spurzem, M.D. ..... Anoka
George Schlesselman, M.D. ..... Anoka
F. E. Mork, M.D. ..... Anoka

BECKER COUNTY
L. H. Rutledge, M.D. ..... Detroit Lakes
L. H. Flancher, M.D. ..... Lake Park
Arnold Larson, M.D. ..... Detroit Lakes

BELTRAMI COUNTY
D. J. Jacobson, M.D. ..... Bemidji
D. H. Garlock, M.D. ..... Bemidji
T. P. Groschupf, M.D. ..... Bemidji

BENTON COUNTY
G. A. Holdridge, M.D. ..... Foley
C. S. Donaldson, M.D. ..... Foley
William Friesleben, M.D. ..... Sauk Rapids

BIG STONE COUNTY
C. I. Oliver, M.D. ..... Graceville
Otto Bergan, M.D. ..... Clinton
B. R. Karn, M.D. ..... Ortonville

BLUE EARTH COUNTY
A. F. Kemp, M.D. ..... Mankato
A. J. Wentworth, M.D. ..... Mankato

BROWN COUNTY
T. F. Hammermeister, M.D. ..... New Ulm
A. L. Kusske, M.D. ..... New Ulm
O. J. Seifert, M.D. ..... New Ulm

CARLTON COUNTY
R. M. Eppard, M.D. ..... Cloquet
E. O. Hanson, M.D. ..... Cloquet
A. Sach-Rowitz, M.D. ..... Moose Lake

CARVER COUNTY
M. B. Hebeisen, M.D. ..... Chaska
H. D. Nagel, M.D. ..... Waconia
B. H. Simons, M.D. ..... Chaska

CASS COUNTY
O. F. Ringle, M.D. ..... Walker
R. W. Campbell, M.D. ..... Cass Lake
C. E. Johnson, M.D. ..... Pine River

CHIPPEWA COUNTY
H. T. Foshager, M.D. ..... Clara City
F. M. Burns, M.D. ..... Milan
L. G. Smith, M.D. ..... Montevideo

CHISAGO COUNTY
J. E. Halpin, M.D. ..... Rush City
A. E. Holmes, M.D. ..... Rush City

CLAY COUNTY
G. L. Gosslee, M.D. ..... Moorhead
F. A. Thysell, M.D. ..... Moorhead
Alphonse Cyr, M.D. ..... Barnesville

CLEARWATER COUNTY
L. J. Larson, M.D. ..... Bagley
R. D. Davis, M.D. ..... Clearbook

COTTONWOOD COUNTY
J. H. Dudley, M.D. ..... Windom
E. S. Schutz, M.D. ..... Mountain Lake
L. E. Sjostrom, M.D. ..... Storden

CROW WING COUNTY
V. E. Quanstrom, M.D. ..... Brainerd
G. I. Badeaux, M.D. ..... Brainerd
Carl Winquist, M.D. ..... Crosby

DAKOTA COUNTY
H. R. Tregilgas, M.D. ..... So. St. Paul
L. D. Peck, M.D. ..... Hastings
J. A. Sanford, M.D. ..... Farmington

DODGE COUNTY
H. R. Baker, M.D. ..... Hayfield
C. E. Bigelow, M.D. ..... Dodge Center
D. E. Affeldt, M.D. ..... Kasson

DOUGLAS COUNTY
L. M. Boyd, M.D. ..... Alexandria
A. D. Haskell, M.D. ..... Alexandria
A. R. Blakey, M.D. ..... Osakis

FARIBAULT COUNTY
M. D. Cooper, M.D. ..... Winnebago
C. E. Wilson, M.D. ..... Blue Earth
W. H. Barr, M.D. ..... Wells

FILLMORE COUNTY
R. V. Williams, M.D. ..... Rushford
C. W. Woodruff, M.D. ..... Chatfield
W. B. Grinnell, M.D. ..... Preston

FREEBORN COUNTY
C. F. Palmer, M.D. ..... Albert Lea
F. W. Calhoun, M.D. ..... Albert Lea
A. Gullixson, M.D. ..... Albert Lea

GOODHUE COUNTY
A. M. Aanes, M.D. ..... Red Wing
M. W. Smith, M.D. ..... Red Wing

GRANT COUNTY
J. T. Leland, M.D. ..... Herman
A. M. Randall, M.D. ..... Ashby
E. T. Reeve, M.D. ..... Elbow Lake

RURAL HENNEPIN COUNTY
T. J. Devereaux, M.D. ..... Wayzata
M. H. Seifert, M.D. ..... Excelsior
F. J. Kucera, M.D. ..... Hopkins

HOUSTON COUNTY
J. W. Helland, M.D. ..... Spring Grove
G. B. Belote, M.D. ..... Caledonia
L. K. Onsgard, M.D. ..... Houston

HUBBARD COUNTY
W. W. Higgs, M.D. ..... Parks Rapids
K. E. Bray, M.D. ..... Park Rapids
D. M. Houston, M.D. ..... Park Rapids

ISANTI COUNTY
L. H. Hedenstrom, M.D. ..... Cambridge
W. T. Nygren, M.D. ..... Braham
D. E. McBroom, M.D. ..... Cambridge

ITASCA COUNTY
J. L. McLeod, M.D. ..... Grand Rapids
H. R. Anderson, M.D. ..... Deer River
E. K. Rowles, M.D. ..... Coleraine

JACKSON COUNTY
A. G. Chadbourn, M.D. ..... Heron Lake
Sigfrid Engh, M.D. ..... Jackson
W. S. Hitchings, M.D. ..... Lakefield

KANABEC COUNTY
C. S. Bossert, M.D. ..... Mora
A. A. Peterson, M.D. ..... Mora
W. F. Nordman, M.D. ..... Mora

KANDIYOHI COUNTY
E. H. Frost, M.D. ..... Willmar
B. J. Branton, M.D. ..... Willmar
J. C. Jacobs, M.D. ..... Willmar

KITTSON COUNTY
A. W. Shaleen, M.D. ..... Hallock
G. W. Dahlquist, M.D. ..... Lancaster
F. F. Stocking, M.D. ..... Hallock

KOOCHICHING COUNTY
M. E. Withrow, M.D. ..... International Falls
C. C. Craig, M.D. ..... International Falls
R. D. Hanover, M.D. ..... Little Fork

LAC QUI PARLE COUNTY
M. Westby, M.D. ..... Madison
C. M. Johnson, M.D. ..... Dawson
W. M. Lee, M.D. ..... Madison

LAKE COUNTY
E. P. Christenson, M.D. ..... Two Harbors
P. B. Monroe, M.D. ..... Two Harbors
R. F. Mueller, M.D. ..... Two Harbors

LE SUEUR COUNTY
R. A. Curtis, M.D. ..... LeCenter
H. B. Aitkens, M.D. ..... LeCenter
J. F. Traxler, M.D. ..... Henderson

LINCOLN COUNTY
A. L. Vadheim, M.D. ..... Tyler
P. C. Johnson, M.D. ..... Tyler
O. A. Erickson, M.D. ..... Ivanhoe

LYON COUNTY
B. C. Ford, M.D. ..... Marshall
A. D. Hoidale, M.D. ..... Tracy
E. T. Sanderson, M.D. ..... Minneota

MAHNOMEN COUNTY

J. J. Lederer, M.D. ..... Mahnomen
W. G. Tanglin, M.D. ..... Mahnomen

MARSHALL COUNTY

C. H. Holstrom, M.D. ..... Warren
H. M. Blegen, M.D. ..... Warren
I. G. Wiltrout, M.D. ..... Oslo

MARTIN COUNTY

R. C. Farrish, M.D. ..... Sherburn
H. B. Bailey, M.D. ..... Fairmont
R. C. Hunt, M.D. ..... Fairmont

McLEOD COUNTY

H. H. Holm, M.D. ..... Glencoe
O. W. Scholpp, M.D. ..... Hutchinson
E. W. Lippmann, M.D. ..... Hutchinson

MEEKER COUNTY

W. E. Macklin, M.D. ..... Litchfield
V. J. Telford, M.D. ..... Litchfield
Lennox Danielson, M.D. ..... Litchfield

MILLE LACS COUNTY

H. C. Cooney, M.D. ..... Princeton
D. M. Brink, M.D. ..... Isle
Melvin Vik, M.D. ..... Onamia

MORRISON COUNTY

J. B. Holst, M.D. ..... Little Falls
H. L. Lamb, M.D. ..... Little Falls
E. J. Simons, M.D. ..... Swanville

MOWER COUNTY

O. H. Hegge, M.D. ..... Austin
G. E. Hertel, M.D. ..... Austin
C. C. Allen, M.D. ..... Austin

MURRAY COUNTY

L. A. Williams, M.D. ..... Slayton
J. T. Larson, M.D. ..... Lake Wilson
B. M. Stevenson, M.D. ..... Fulda

NICOLLET COUNTY

M. E. Lenander, M.D. ..... St. Peter
O. H. Wolner, M.D. ..... St. Peter
J. F. Traxler, M.D. ..... Henderson

NOBLES COUNTY

J. D. Waller, M.D. ..... Wilmont
B. O. Mork, Sr., M.D. ..... Worthington
E. A. Kilbride, M.D. ..... Worthington

NORMAN COUNTY

E. Haugseth, M.D. ..... Twin Valley
Eskil Erickson, M.D. ..... Halstad
G. W. Bohl, M.D. ..... Ada

OLMSTED COUNTY

J. E. Crewe, M.D. ..... Rochester
Dorr Hallenbeck, M.D. ..... Rochester
Felix Dolder, M.D. ..... Eyota

OTTER TAIL COUNTY

A. J. Lewis, M.D. ..... Henning
W. L. Burnap, M.D. ..... Fergus Falls
G. C. Jacobs, M.D. ..... Fergus Falls

PENNINGTON COUNTY

O. F. Mellby, M.D. ..... Thief River Falls
O. G. Lynde, M.D. ..... Thief River Falls
H. K. Helseth, M.D. ..... Thief River Falls

PINE COUNTY

A. K. Stratte, M.D. ..... Pine City
A. L. Arends, M.D. ..... Sandstone
C. G. Kelsey, M.D. ..... Hinckley

PIPESTONE COUNTY

W. G. Benjamin, M.D. ..... Pipestone
H. DeBoer, M.D. ..... Edgerton
J. G. Lohmann, M.D. ..... Jasper

POLK COUNTY

C. L. Oppegaard, M.D. ..... Crookston
J. F. Norman, M.D. ..... Crookston
S. H. Stuurmans, M.D. ..... Erskine

POPE COUNTY

A. F. Giesen, M.D. ..... Starbuck
E. A. Eberlin, M.D. ..... Glenwood
B. I. McIver, M.D. ..... Lowry

RED LAKE COUNTY

J. A. Roy, M.D. ..... Red Lake Falls

REDWOOD COUNTY

R. A. Peterson, M.D. ..... Vesta
T. E. Flinn, M.D. ..... Redwood Falls

RENVILLE COUNTY

J. A. Cosgriff, M.D. ..... Olivia
F. W. Penhall, M.D. ..... Morton
W. J. Bushard, M.D. ..... Bird Island

RICE COUNTY

S. B. Haessly, M.D. ..... Faribault
C. M. Robilliard, M.D. ..... Faribault
C. D. Lufkin, M.D. ..... Northfield

ROCK COUNTY

C. L. Sherman, M.D. ..... Luverne
C. O. Wright, M.D. ..... Luverne
F. W. Bofenkamp, M.D. ..... Luverne

ROSEAU COUNTY

J. L. Delmore, M.D. ..... Roseau
N. M. Leitch, M.D. ..... Warroad
D. O. Berge, M.D. ..... Roseau

ST. LOUIS COUNTY

W. A. Coventry, M.D. ..... Duluth
C. H. Schroder, M.D. ..... Duluth
P. G. Boman, M.D. ..... Duluth

SCOTT COUNTY

C. J. Olson, M.D. ..... Belle Plaine
B. F. Pearson, M.D. ..... Shakopee
H. D. Nagel, M.D. ..... Waconia

SHERBURNE COUNTY

A. B. Roehlke, M.D. ..... Elk River
E. F. Clothier, M.D. ..... Elk River

SIBLEY COUNTY

W. P. Olson, M.D. ..... Gaylord
Rolf Hovde, M.D. ..... Winthrop
Thomas Martin, M.D. ..... Arlington

STEARNS COUNTY

C. F. Brigham, M.D. ..... St. Cloud
A. H. Zachman, M.D. ..... Melrose
William Friesleben, M.D. ..... Sauk Rapids

STEELE COUNTY

J. A. McIntyre, M.D. ..... Owatonna
E. J. Nelson, M.D. ..... Owatonna
L. V. Berghs, M.D. ..... Owatonna

STEVENS COUNTY

E. T. Fitzgerald, M.D. ..... Morris
C. E. Caine, M.D. ..... Morris
M. L. Ransom, M.D. ..... Hancock

SWIFT COUNTY

Hans Johnson, M.D. ..... Kerkhoven
W. C. Kaufman, M.D. ..... Appleton
C. L. Scofield, M.D. ..... Benson

TODD COUNTY

M. E. Mosby, M.D. ..... Long Prairie
J. M. Cook, M.D. ..... Staples
W. W. Will, M.D. ..... Bertha

TRAVERSE COUNTY

C. F. Ewing, M.D. ..... Wheaton
N. F. Doleman, M.D. ..... Tintah
A. L. Lindberg, M.D. ..... Wheaton

WABASHA COUNTY

E. C. Bayley, M.D. ..... Lake City
C. G. Ochsner, M.D. ..... Wabasha
D. G. Mahle, M.D. ..... Plainview
W. T. Cochrane, M.D. ..... Lake City

WADENA COUNTY

C. H. Pierce, M.D. ..... Wadena
L. T. Davis, M.D. ..... Wadena
A. H. Borgerson, M.D. ..... Sebeka

WASECA COUNTY

B. J. Gallagher, M.D. ..... Waseca
R. O. Spittler, M.D. ..... New Richland
R. C. Hottinger, M.D. ..... Janesville

WASHINGTON COUNTY

W. R. Humphrey, M.D. ..... Stillwater
E. V. Strand, M.D. ..... Bayport
J. W. Stuhr, M.D. ..... Stillwater

WATONWAN COUNTY

Albert Thompson, M.D. ..... St. James
H. B. Grimes, M.D. ..... Madelia
O. E. Hagen, M.D. ..... Butterfield

WILKIN COUNTY

L. H. McMahon, M.D. ..... Breckenridge
W. E. Wray, M.D. ..... Campbell
E. W. Rimer, M.D. ..... Breckenridge

WINONA COUNTY

C. P. Robbins, M.D. ..... Winona
E. E. Christensen, M.D. ..... Winona
L. I. Younger, M.D. ..... Winona

WRIGHT COUNTY

W. E. Hart, M.D. ..... Monticello
L. H. Bendix, M.D. ..... Annandale
T. J. Catlin, M.D. ..... Buffalo

YELLOW MEDICINE COUNTY

A. G. Sanderson, M.D. ..... Granite Falls
R. H. Kath, M.D. ..... Wood Lake
M. I. Hauge, M.D. ..... Clarkfield
G. M. Tangen, M.D. ..... Canby

(No committees have been appointed in the following counties: Cook, Lake of the Woods.)

Women's Auxiliary

to the

Minnesota State Medical Association

OFFICERS

Mrs. A. C. Baker..... *President* .....Fergus Falls
Mrs. M. A. Nicholson..... *President-Elect* ..... Duluth
Mrs. W. B. Roberts..... *Past President* ..... Minneapolis
Mrs. J. J. Ryan..... *First Vice President* .....St. Paul
Mrs. T. N. Fleming..... *Second Vice President* .....St. Cloud
Mrs. P. A. Robertson..... *Third Vice President* ..... Austin
Mrs. B. S. Adams..... *Fourth Vice President* ..... Hibbing
Mrs. R. J. Josewski..... *Recording Secretary* ..... Stillwater
Mrs. N. H. Baker..... *Corresponding Secretary* .....Fergus Falls
Mrs. H. F. Wahlquist..... *Treasurer* ..... Minneapolis
Mrs. W. W. Moir..... *Auditor* ..... Minneapolis
Mrs. E. C. Eshelby..... *Parliamentarian* .....St. Paul
Mrs. J. B. Gaida..... *Historian* .....St. Cloud

CHAIRMEN OF COMMITTEES

Advisory—Mrs. J. F. Norman.....Crookston
Archives—Mrs. S. S. Hesselgrave.....St. Paul
Editor—Mrs. E. V. Goltz.....St. Paul
Exhibits—Mrs. M. S. Henderson.....Rochester
Finance—Mrs. James Blake.....Hopkins
Health Education—Mrs. J. A. Thabes, Sr....Brainerd
Hygeia—Mrs. W. W. Will.....Bertha
Legislation—Mrs. L. L. Sogge.....Windom
Organization—Mrs. M. A. Nicholson.....Duluth
Printing—Mrs. R. R. Cranmer.....Minneapolis
Public Relations—Mrs. A. F. Branton.....Willmar
Resolutions—Mrs. Charles Bolsta.....Ortonville
Revisions—Mrs. W. J. Byrnes.....Minneapolis
Social—Mrs. G. B. Eusterman.....Rochester

District Councilors

DISTRICT NO. 1

H. Z. Giffin, M.D.....Rochester
Counties—Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, Winona.

DISTRICT NO. 2

L. L. Sogge, M.D.....Windom
Counties—Cottonwood, Faribault, Jackson, Martin, Murray, Nobles, Pipestone, Rock, Watonwan.

DISTRICT NO. 3

B. J. Branton, M.D.....Willmar
Counties—Big Stone, Brown, Chippewa, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, Meeker, Pope, Redwood, Stevens, Swift, Traverse, Yellow Medicine.

DISTRICT NO. 4

A. E. Sohmer, M.D.....Mankato
Counties—Blue Earth, Carver, LeSueur, McLeod, Nicollet, Renville, Scott, Sibley, Waseca.

DISTRICT NO. 5

E. M. Jones, M.D.....St. Paul
Counties—Anoka, Chisago, Dakota, Isanti, Kanabec, Mille Lacs, Pine, Ramsey, Sherburne, Washington

DISTRICT NO. 6

C. A. Stewart, M.D.....Minneapolis
Counties—Hennepin, Wright

DISTRICT NO. 7

E. J. Simons, M.D.....Swanville
Counties—Aitkin, Beltrami, Benton, Cass, Clearwater, Crow Wing, Hubbard, Koochiching, Morrison, Stearns, Todd, Wadena.

DISTRICT NO. 8

W. L. Burnap, M.D.....Fergus Falls
Counties—Becker, Clay, Douglas, Grant, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Otter Tail, Pennington, Polk, Red Lake, Roseau, Wilkin.

DISTRICT NO. 9

F. J. Elias, M.D.....Duluth
Counties—Carlton, Cook, Itasca, Lake, St. Louis.

MINNESOTA STATE MEDICAL ASSOCIATION

COUNTY SOCIETY ROSTER

BLUE EARTH COUNTY MEDICAL SOCIETY

Regular meetings, last Monday of each month
Annual meeting in December
Number of Members: 34

President
Hassett, R. G.....Mankato

Secretary
Troost, H. B.....Mankato

Andrews, R. N.....Mankato
Benham, E. W.....Mankato
Black, William.....Mankato
Butzer, J. A.....Mankato
Dahl, G. A.....Mankato
Denman, A. V.....Mankato
Edwards, R. T.....Elysian
Franchere, F. W.....Lake Crystal
Fugina, G. R.....Mankato
Gunlaugson, F. G.....Mankato
Hankerson, R. G.....Minnesota Lake
Hassett, R. G.....Mankato
Holbrook, J. S.....Mankato
Howard, M. I.....Mankato
Huffington, H. L.....Mankato
Jones, O. H.....Madison Lake
Juliar, R. O.....St. Clair
Kaufman, W. B.....Mankato
Liedloff, A. G.....Mankato
Lloyd, H. J.....Mankato
Macbeth, J. L.....St. Clair
Mickelson, J. C.....Mankato
Miller, V. I.....Mankato
Morgan, H. O.....Amboy
*Osborn, Lida .....Mankato
Penn, G. E.....Mankato
Samuelson, L. G.....Mankato
Schlesselman, J. T.....Mankato
Schmidt, P. A.....Good Thunder
Sohmer, A. E.....Mankato
Stillwell, W. C.....Mankato
Troost, H. B.....Mankato
Vezina, J. C.....Mapleton
Wentworth, A. J.....Mankato
Williams, H. O.....Lake Crystal

BLUE EARTH VALLEY MEDICAL SOCIETY

Faribault and Martin Counties

Regular meetings, first Thursday of February, May, August and November
Annual meeting, first Thursday in November
Number of Members: 36

President
Vaughan, V. M.....Truman

Secretary
Mills, J. L.....Winnebago

Bailey, H. B.....Fairmont
Barr, W. H.....Wells
Bergen, C. T.....Blue Earth
Blanchard, H. G.....Fairmont
Boysen, Herbert .....Welcome
Chambers, W. C.....Blue Earth
Cooper, M. D.....Winnebago
Demo, P. W.....Wells
Farrish, R. C.....Sherburn
Fisher, I. I.....Ceylon
Gardner, V. H.....Fairmont
Havel, T. E.....Blue Earth
Heimark, J. J.....Fairmont
Henderson, A. J.....Kiester
Holm, P. F.....Wells
Hunt, R. C.....Fairmont
Hunte, A. F.....Bylas, Ariz.
*Jacobs, A. C.....Elmore
Johnson, D. W.....Fairmont
Johnson, H. P.....Fairmont
Krause, C. W.....Fairmont
Luedtke, G. H.....Fairmont
Marken, M. H.....Fairmont
McGroarty, J. J.....Easton
McKean, F. F.....Delavan
Miller, H. A.....Fairmont
Mills, J. L.....Winnebago
Raymond, J. H.....Triumph
Rowe, W. H.....Fairmont
Russ, H. H.....Blue Earth
Sommer, A. W.....Elmore
Sybilrud, H. W.....Bricelyn
Thayer, E. A.....Truman
Vaughan, V. M.....Truman
Virnig, M. P.....Wells
Wilson, C. E.....Blue Earth
Zemke, E. E.....Fairmont

CAMP RELEASE DISTRICT MEDICAL SOCIETY

Chippewa, Lac Qui Parle and Yellow Medicine Counties

Annual meeting, March
Number of Members: 26

President
Roust, H. A.....Montevideo

Secretary
Westby, Magnus.....Madison

Bacon, R. S.....Montevideo
Bergh, L. N.....Montevideo
Boody, G. J., Jr.....Dawson
Burns, F. M.....Milan
Burns, M. A.....Milan
*Cress, E. E.....Boyd
Foshager, H. T.....Clara City
Hauge, M. I.....Clarkfield
*Hauge, M. M.....Clarkfield
Herbert W. L.....Granite Falls
Holmberg, L. J.....Canby
Hudec, E. R.....Echo
Johnson, C. M.....Dawson
Jordan, L. S.....Granite Falls
Kath, R. H.....Wood Lake
Kaufman, W. C.....Appleton
Lee, W. N.....Madison
Lima, Ludvig.....Montevideo
Nelson, M. S.....Granite Falls
Pertl, A. L.....Canby
Roust, H. A.....Montevideo
Sanderson, A. G.....Granite Falls
Schmidt, P. G., Jr.....Granite Falls
Smith, L. G.....Montevideo
Swezey, B. F.....Bellingham
Tangen, G. M.....Canby
Westby, Magnus.....Madison
Westby, Nels.....Madison

CLAY-BECKER COUNTY MEDICAL SOCIETY

Annual meeting, December
Number of Members: 24

President
Seitz, S. B.....Barnesville

Secretary
Flancher, L. H.....Lake Park

Aborn, W. H.....Hawley
Bottolfson, B. T.....Moorhead
Carman, J. E.....Detroit Lakes
Duncan, J. W.....Moorhead
Ellingson, A. R.....Detroit Lakes
Flancher, L. H.....Lake Park
Gosslee, G. L.....Moorhead
Gunderson, R. M.....Lake Park
Hagen, O. J.....Moorhead
Haight, G. G.....Audubon
Herbst, R. F.....Tofte
Humphrey, E. W.....Moorhead
Ingebrigtson, E. K. G.....Moorhead
Larsen, O. O.....Detroit Lakes
Larson, Arnold.....Detroit Lakes
Moberg, C. W.....Detroit Lakes
Rice, H. G.....Moorhead
Rutledge, L. H.....Detroit Lakes
Seitz, S. B.....Barnesville
Simison, Carl.....Barnesville
Simison, C. W.....Hawley
Stafne, W. A.....Moorhead
Thysell, F. A.....Moorhead
Thysell, V. D.....Hawley

DAKOTA COUNTY MEDICAL SOCIETY

Acting Secretary
Peck, L. D.....Hastings

Peck, L. D.....Hastings
Peck, L. R.....Hastings

EAST CENTRAL MINNESOTA MEDICAL SOCIETY

Anoka, Chisago, Isanti, Kanabec, Mille Lacs, Pine and Sherburne Counties

Annual meeting, December
Number of Members: 36

President
Vik, Melvin .....Onamia

Secretary
Nordman, W. F.....Mora
Arends, A. L.....Sandstone

Blomberg, W. R.....Princeton
Blumenthal, J. S.....Columbia Heights
Bossert, C. S.....Mora
Brink, D. M.....Isle
Brownstone, Manuel.....Sandstone
Bunker, B. W.....Anoka
Callahan, F. F.....Pokegama
Cooney, H. C.....Princeton
Dedolph, T. H.....Braham
Dredge, H. P.....Sandstone
Feinstein, J. Y.....Cambridge
Fredlund, M. L.....Milaca
Gardner, W. P.....Anoka
Gully, R. J.....Cambridge
Halpin, J. E.....Rush City

*Deceased

Hedenstrom, L. H.....Cambridge
Holmes, A. E.....Rush City
Kaufman, E. J.....Appleton
Kelsey, C. G.....Hinckley
McBroom, D. E.....Cambridge
Mork, F. E.....Anoka
Neumaier, Arthur.....Lindstrom
Nordman, W. F.....Mora
Nygren, W. T.....Braham
Petersen, P. C.....Braham
Peterson, A. A.....Mora
Roehlke, A. B.....Elk River
Schlesselman, George.....Anoka
Spurzem, R. J.....Anoka
Stephan, E. L.....Hinckley
Stratte, A. K.....Pine City
Swensen, R. G.....North Branch
Tesch, G. H.,.....Elk River
Trommald, Gladys B. K.....Brainerd
Vik, Melvin.....Onamia

FREEBORN COUNTY MEDICAL SOCIETY

Regular meetings, Quarterly
Annual meeting, December
Number of Members: 19

President
Palmer, C. F.....Albert Lea

Secretary
Prins, L. R.....Albert Lea

Barr, L. C.....Albert Lea
Burns, H. D.....Albert Lea
Butturff, C. R.....Freeborn
Calhoun, F. W.....Albert Lea
Donovan, D. L.....Albert Lea
Folken, F. G.....Albert Lea
Freeman, J. P.....Albert Lea
Freligh, W. P.....Albert Lea
Gamble, J. W.....Albert Lea
Gamble, P. M.....Albert Lea
Gullixson, A.....Albert Lea
Kaasa, L. J.....Albert Lea
Kamp, B. A.....Albert Lea
Leopard, B. A.....Albert Lea
Palmer, C. F.....Albert Lea
Palmer, W. L.....Albert Lea
Prins, L. R.....Albert Lea
Schultz, J. A.....Albert Lea
Swanson, R. R.....Albert Lea

GOODHUE COUNTY MEDICAL SOCIETY

Regular meetings, none
Annual meeting, December
Number of Members: 22

President
McGuigan, H. T.....Red Wing

Secretary
Juers, E. H.....Red Wing

Aanes, A. M.....Red Wing
Aanes, A. R.....Ellsworth, Wis.
Anderson, S. H.....Red Wing
Brusegard, J. F.....Red Wing
Claydon, D. R.....Red Wing
Claydon, H. F.....Zumbrota
Claydon, L. E.....Red Wing
Flom, M. G.....Zumbrota
Graves, R. B.....Red Wing
Hartnagel, G. F.....Red Wing
Hedin, R. F.....Chicago, Ill.
Johnson, A. E.....Red Wing
Jones, A. W.....Red Wing
Juers, E. H.....Red Wing
Liffrig, W. W.....Goodhue
Mack, J. J.....Little Rock, Ark.
McGuigan, H. T.....Red Wing
Nordholm, V. W.....Ellsworth, Wis.
Smith, M. W.....Red Wing
Steffens, L. A.....Red Wing
Vaaler, T.....Cannon Falls
Williams, M. R.....Cannon Falls

HENNEPIN COUNTY MEDICAL SOCIETY

Regular meetings, first Monday each month excepting June, July, August and September
Annual meeting, October
Number of Members: 641

President
Johnson, J. A.....Minneapolis

Secretary
Daniel, L. M.....Minneapolis

Executive Secretary
Mr. J. H. Baker.....Minneapolis

Aagaard, G. N., Jr.....Minneapolis
Abramson, Milton.....Minneapolis
Adams, J. M.....Minneapolis
Alexander, H. A.....Minneapolis
Aling, C. A.....Minneapolis
Aling, C. P.....Minneapolis
Allen, H. W.....Minneapolis
Allison, R. G.....Minneapolis
Altnow, H. O.....Minneapolis
Andersen, A. G.....Minneapolis
Andersen, S. C.....Minneapolis
Anderson, D. D.....Minneapolis
Anderson, E. D.....Minneapolis
Anderson, E. R.....Minneapolis
Anderson, F. J.....Minneapolis
Anderson, J. K.....Minneapolis
Anderson, K. W.....Minneapolis
Anderson, P. A.....Minneapolis
Anderson, U. S.....Minneapolis
Andreassen, E. C.....Minneapolis
Andrews, R. S.....Minneapolis
Annis, H. B.....Minneapolis
Arey, S. L.....Excelsior
Arlander, C. E.....Minneapolis
Arling, L. S.....Minneapolis
Arnold, Anna W.....Minneapolis
Arnold, D. C.....Minneapolis
Arvidson, C. G.....Minneapolis
Aune, Martin.....Minneapolis
Aurand, W. H.....Minneapolis
Baken, M. P.....Minneapolis
Baker, A. B.....Minneapolis
Baker, A. T.....Minneapolis
Baker, E. L.....Minneapolis
Baker, Looe.....Minneapolis
Balkin, S. G.....Minneapolis
Barber, J. P.....Minneapolis
Barron, Moses.....Minneapolis
Bass, G. W.....Minneapolis
Baxter, S. H.....Minneapolis
Bayard, H. F.....Minneapolis
Beard, A. H.....Minneapolis
Beckman, W. G.....Minneapolis
Bedford, E. W.....Minneapolis
Bell, E. T.....Minneapolis
Belzer, M. S.....Minneapolis
Benesh, N. G.....Minneapolis
Benjamin, A. E.....Minneapolis
Benjamin, E. G.....Minneapolis
Benjamin, H. G.....Minneapolis
Benn, F. G.....Minneapolis
Berger, A. G.....Minneapolis
Bergh, G. S.....Minneapolis
Berkwitz, N. J.....Minneapolis
Berman, Reuben.....Minneapolis
Bessesen, A. N., Jr.....Minneapolis
Bessesen, D. H.....Minneapolis
Bessesen, W. A.....Minneapolis
Blake, James.....Hopkins
Blake, J. A.....Hopkins
Blaustone, H. H.....Minneapolis
Blumstein, Alex.....Minneapolis
Bockman, M. W. H.....Minneapolis
Boehme, E. J.....Minneapolis
Boehrer, J. J.....Minneapolis
Boies, L. R.....Minneapolis
Booth, A. E.....Minneapolis
Boreen, C. A.....Minneapolis
Borgeson, E. J.....Minneapolis
Borman, C. N.....Minneapolis
Bouman, H. A. H.....Minneapolis
Boynton, Ruth E.....Minneapolis
Bratrud, A. F.....Minneapolis
Brekke, H. J.....Minneapolis
Brooks, C. N.....Minneapolis
Brown, E. D.....Paynesville
Brutsch, G. C.....Minneapolis
Bryant, F. L.....Minneapolis
Buchstein, H. F.....Minneapolis
Bulkley, Kenneth.....Minneapolis
Butler, John.....Minneapolis
Buzzelle, L. K.....Minneapolis
Cable, M. L.....Minneapolis
Cabot, V. S.....Minneapolis
Cady, L. H.....Minneapolis
Callerstrom, G. W.....Minneapolis
Cameron, Isabell L.....Minneapolis
Camp, W. E.....Minneapolis
Campbell, L. M.....Minneapolis
Campbell, O. J.....Minneapolis
Cardle, A. E.....Minneapolis
Carey, J. B.....Minneapolis
Carlson, Lawrence.....Minneapolis
Carlson, L. T.....Minneapolis
Caron, R. P.....Minneapolis
Caspers, C. G.....Minneapolis
Cavanor, F. T.....Minneapolis
Challman, S. A.....Minneapolis
Chesley, A. J.....Minneapolis
Christenson, G. R.....Minneapolis
Christianson, H. W.....Minneapolis
Clark, H. S.....Minneapolis
Clay, L. B.....Minneapolis
Cohen, B. A.....Minneapolis
Cohen, S. S.....Oak Terrace
Condit, W. H.....Minneapolis
Cook, H. W.....Minneapolis
Cooperman, H. O.....Minneapolis
Corbett, J. F.....Minneapolis
Corniea, A. D.....Minneapolis
Cottam, G. G.....Minneapolis
Cranmer, R. R.....Minneapolis
Cranston, R. W.....Minneapolis
Creevy, C. D.....Minneapolis
Creighton, R. H.....Minneapolis
Curtin, J. F.....Minneapolis
Cutts, George.....Minneapolis
Dady, E. E.....Minneapolis
Dahl, E. O.....Minneapolis
Dahl, J. A.....Minneapolis
Daniel, D. H.....Minneapolis
Daniel, L. M.....Minneapolis
Dart, L. O.....Minneapolis
Davis, J. C.....Minneapolis
del Plaine, C. W.....Minneapolis
Devereaux, T. J.....Wayzata
Diehl, H. S.....Minneapolis
Diessner, H. D.....Minneapolis
Doering, R. E.....Minneapolis
Dorge, R. I.....Minneapolis
Dornblaser, H. B.....Minneapolis
Dorsey, G. C.....Minneapolis
Doxey, G. L.....Minneapolis
Doyle, L. O.....Minneapolis
Drake, C. R.....Minneapolis
Drill, H. E.....Hopkins
Duff, E. R.....Minneapolis
Dukelow, D. A.....Minneapolis
Dumas, A. G.....Minneapolis
Dunlap, E. H.....Minneapolis
Dunn, G. R.....Minneapolis
Duryea, W. M.....Minneapolis
Dutton, C. E.....Minneapolis
Dvorak, B. A.....Minneapolis
Dwan, P. F.....Minneapolis
Dworsky, S. D.....Minneapolis
Ehrenberg, C. J.....Minneapolis
Ehrlich, S. P.....Minneapolis

Eich, Matthew.....Minneapolis
Eisenstadt, D. H.....Minneapolis
Eitel, G. D.....Minneapolis
Ellison, D. E.....Minneapolis
Engelhart, P. C.....Minneapolis
Engstrand, O. J.....Minneapolis
Erdmann, C. A.....Minneapolis
Erickson, R. F.....Minneapolis
Ericson, R. M.....Minneapolis
Evans, E. T.....Minneapolis
Evans, R. D.....Minneapolis
Fahr, G. E.....Minneapolis
Fansler, W. A.....Minneapolis
Feeney, J. M.....Minneapolis
Fenger, E. P. K.....Oak Terrace
Fetterly, Warren.....Minneapolis
Fink, L. W.....Minneapolis
Fink, W. H.....Minneapolis
Fitzgerald, D. F.....Minneapolis
Fjeldstad, C. A.....Minneapolis
Fleming, A. S.....Minneapolis
Ford, W. H.....Minneapolis
Foster, W. K.....Minneapolis
Fowler, L. H.....Minneapolis
Fredericks, G. M.....Minneapolis
Friedell, Aaron.....Minneapolis
Fritzell, K. E.....Minneapolis
Frost, J. B.....Minneapolis
Fuller, Alice H.....Minneapolis
Funk, V. K.....Oak Terrace
Gammell, J. H.....Minneapolis
Gardner, E. L.....Minneapolis
Garten, J. L.....Minneapolis
Giere, E. O.....Minneapolis
Giere, J. C.....Minneapolis
Giere, R. W.....Minneapolis
Giessler, P. W.....Minneapolis
Gilbert, M. G.....Minneapolis
Gilles, F. L.....Minneapolis
Gingold, B. A.....Minneapolis
Girvin, R. B.....Minneapolis
Golberg, M. L.....Minneapolis
Goldberg, I. M.....Minneapolis
Goldman, T. I.....Minneapolis
Good, H. D.....Minneapolis
Gordon, P. E.....Minneapolis
Gratzek, F. R.....Minneapolis
Grave, Floyd.....Minneapolis
Grimes, Marian.....Minneapolis
Gronvall, P. R.....Minneapolis
Gunderson, N. A.....Minneapolis
Gushurst, E. G.....Minneapolis
Gustason, H. T.....Minneapolis
Hacking, F. H.....Minneapolis
Haggard, G. D.....Minneapolis
Hall, J. M.....Minneapolis
Hallberg, C. A.....Minneapolis
Hallock, Philip.....Minneapolis
Hamel, A. L.....Minneapolis
Hamilton, A. S.....Minneapolis
Hamlin, G. B.....Minneapolis
Hammerstad, L. M.....Minneapolis
Hammond, A. J.....Minneapolis
Hannah, H. B.....Minneapolis
Hansen, C. O.....Minneapolis
Hansen, E. W.....Minneapolis
Hansen, Olga S.....Minneapolis
Hanson, H. J.....Minneapolis
Hanson, H. V.....Minneapolis
Hanson, M. B.....Minneapolis
Hanson, W. A.....Minneapolis
Happe, L. J.....Minneapolis
Harrington, C. D.....Minneapolis
Harrington, F. E.....Minneapolis
Harris, L. D.....Minneapolis
Hart, V. L.....Minneapolis
Hartzell, T. B.....Minneapolis
Hastings, D. R.....Minneapolis
Haugen, J. A.....Minneapolis
Haven, W. K.....Minneapolis
Haverfield, Addie R.....Minneapolis
Hawkinson, R. P.....Minneapolis
Hayes, J. M.....Minneapolis
Hayes, A. T.....Minneapolis
Head, D. P.....Minneapolis
Head, G. D.....Minneapolis
Hedback, A. E.....Minneapolis
Heim, R. R.....Minneapolis
Hendricks, E. J.....Minneapolis
Hendrickson, J. F.....Minneapolis
Henrikson, E. C.....Minneapolis
Henry, C. E.....Minneapolis
Henry, M. O.....Minneapolis
Herbolsheimer, A. J.....Minneapolis
Herman, A. L.....Minneapolis
Hiebert, J. P.....Minneapolis
Higgins, J. H.....Minneapolis
Hill, Eleanor J.....Minneapolis
Hillis, S. J.....Minneapolis

*Deceased.

Hirschfelder, A. D.....Minneapolis
Hirshfield, F. R.....Minneapolis
Hoaglund, A. W.....Minneapolis
Hobbs, C. J.....Minneapolis
Hodge, S. V.....Minneapolis
Hoffert, H. E.....Minneapolis
Hoffman, R. A.....Minneapolis
Hoffman, W. L.....Minneapolis
Holl, P. M.....Minneapolis
Holmberg, C. J.....Minneapolis
Holt, W. B.....Minneapolis
Holzapfel, F. C.....Minneapolis
Houkom, Bjarne.....Minneapolis
Hovland, M. L.....Minneapolis
Hudson, G. E.....Minneapolis
Huenekens, E. J.....Minneapolis
Hultkrans, J. C.....Minneapolis
Hultkrans, R. E.....Minneapolis
Hurd, Annah.....Minneapolis
Hutchinson, C. J.....Minneapolis
Hymes, Charles.....Minneapolis
Hynes, J. E.....Minneapolis
Irvine, H. G.....Minneapolis
Jackson, C. M.....Minneapolis
Jennings, Mary H.....Minneapolis
Jensen, Harry.....Minneapolis
Jensen, M. J.....Minneapolis
Johnson, A. B.....Minneapolis
Johnson, A. E.....Minneapolis
Johnson, E. W.....Minneapolis
Johnson, H. A.....Minneapolis
Johnson, J. A.....Minneapolis
Johnson, Julius.....Minneapolis
Johnson, N. A.....Minneapolis
Johnson, Norman.....Minneapolis
Johnson, N. T.....Minneapolis
Johnson, R. A.....Minneapolis
Johnson, R. E.....Minneapolis
Johnson, S. M.....Minneapolis
Johnson, Y. T.....Minneapolis
Jones, G. M.....Minneapolis
Jones, H. W.....Minneapolis
Jones, H. W., Jr.....Minneapolis
Jones, W. R.....Minneapolis
Josewich, Alexander.....Minneapolis
Kalin, O. T.....Minneapolis
Karlstrom, A. E.....Minneapolis
Kelby, G. M.....Minneapolis
Kennedy, C. C.....Minneapolis
Kennedy, Jane F.....Minneapolis
Kerkhof, A. C.....Minneapolis
Kertesz, G.....Minneapolis
Kibbe, O. A.....Minneapolis
King, E. A.....Minneapolis
King, H. T.....Minneapolis
Kinsella, T. J.....Minneapolis
Kistler, A. J.....Minneapolis
Kistler, C. M.....Minneapolis
Knapp, M. E.....Minneapolis
Knight, R. R.....Minneapolis
Knight, R. T.....Minneapolis
Koepcke, G. M.....Minneapolis
Koller, H. M.....Minneapolis
Koller, L. R.....Minneapolis
Korchik, J. P.....Minneapolis
Koucky, R. W.....Minneapolis
Kucera, F. J.....Hopkins
Kucera, W. J.....Minneapolis
Lajoie, J. M.....Minneapolis
Lang, L. A.....Minneapolis
Lapierre, A. P.....Minneapolis
*Lapierre, C. A.....Minneapolis
Lapierre, J. T.....Minneapolis
Larsen, F. W.....Minneapolis
Larson, C. M.....Minneapolis
Larson, Lawrence M.....Minneapolis
Larson, Leonard M.....Oak Terrace
Larson, P. N.....Minneapolis
La Vake, R. T.....Minneapolis
Laymon, C. W.....Minneapolis
Lazar, H. L.....Minneapolis
Leavitt, H. H.....Minneapolis
Lebowske, J. A.....Minneapolis
Leclercq, G. T. A.....Boston, Mass.
Lee, H. M.....Minneapolis
Leland, H. R.....Minneapolis
Leland, J. A. C., Jr.....Minneapolis
Lenz, O. A.....Minneapolis
Leonard, L. J.....Minneapolis
Leonard, Sam.....Minneapolis
Lillehei, E. J.....Robbinsdale
Lind, C. J.....Minneapolis
Lindgren, R. C.....Minneapolis
Lindquist, R. H.....Minneapolis
Linner, H. P.....Minneapolis
Linton, W. B.....Minneapolis
Lippman, E. S.....Minneapolis
Lipschultz, Oscar.....Minneapolis
Litchfield, J. T.....Minneapolis
Litman, A. B.....Minneapolis
Litzenberg, J. C.....Minneapolis

Logefeil, R. C.....Minneapolis
Long, Jesse.....Minneapolis
Loomis, E. A.....Minneapolis
Lowry, Elizabeth C.....Minneapolis
Lowry, Thomas.....Minneapolis
Lufkin, N. H.....Minneapolis
Lundblad, R. A.....Minneapolis
Lundblad, S. W.....Minneapolis
Lundgren, A. C.....Minneapolis
Lundquist, F. F.....Minneapolis
Lynch, M. J.....Minneapolis
Lysne, Henry.....Minneapolis
Lysne, Myron.....Minneapolis
MacDonald, A. E.....Minneapolis
MacDonald, D. A.....Minneapolis
Mach, F. B.....Minneapolis
MacKinnon, D. C.....Minneapolis
Macnie, J. S.....Minneapolis
Maeder, E. C.....Minneapolis
Maland, C. O.....Minneapolis
Mariette, E. S.....Oak Terrace
Mark, D. B.....Minneapolis
Marking, G. H.....Osseo
Martinson, C. J.....Wayzata
Matchan, G. R.....Minneapolis
Matthews, Justus.....Minneapolis
Mattill, P. M.....Oak Terrace
Mattson, Hamlin.....Minneapolis
Maxeiner, S. R.....Minneapolis
May, W. H.....Minneapolis
McCarthy, Donald.....Minneapolis
McCartney, J. S.....Minneapolis
McCrimmon, H. P.....Minneapolis
McDaniel, Orianna.....Minneapolis
McFarland, A. H.....Minneapolis
McGandy, R. F.....Minneapolis
McGeary, G. E.....Minneapolis
McInerny, M. W.....Minneapolis
McIntyre, George..Long Beach, Calif.
McKelvey, J. L.....Minneapolis
McKenzie, C. H.....Minneapolis
McKinlay, C. A.....Minneapolis
McKinley, J. C.....Minneapolis
McKinney, F. S.....Minneapolis
McLennan, C. E.....Minneapolis
McPheeters, H. O.....Minneapolis
McQuarrie, Irvine.....Minneapolis
Meland, E. L.....Minneapolis
Merkert, C. E.....Minneapolis
Merkert, G. L.....Minneapolis
Merrill, Elisabeth.....Minneapolis
Meyer, E. L.....Minneapolis
Michael, J. C.....Minneapolis
Michel, H. H.....Minneapolis
Michelson, H. E.....Minneapolis
Miller, H. E.....Minneapolis
Miller, J. C.....Minneapolis
Milton, J. S.....Minneapolis
Mitchell, E. C.....Mound
Moe, J. H.....Minneapolis
Moen, J. K.....Minneapolis
Moir, W. W.....Minneapolis
Monson, E. M.....Minneapolis
*Moorhead, Martha B.....Minneapolis
Moren, Edward.....Minneapolis
Moriarty, Cecile R.....St. Paul
Morrison, A. W.....Minneapolis
Morrison, Charlotte J.....Minneapolis
Morse, R. W.....Minneapolis
*Morton, H. McI...Vincentown, N. J.
Murphy, E. P.....Minneapolis
Murphy, I. J.....Minneapolis
Myers, J. A.....Minneapolis
Neal, J. M.....Minneapolis
Neary, R. P.....Minneapolis
*Neilson, H. F.....Minneapolis
Nelson, H. S.....Minneapolis
Nelson, Harvey.....Minneapolis
Nelson, O. L. N.....Minneapolis
Nelson, W. I.....Minneapolis
Newhart, Horace.....Minneapolis
Nordin, G. T.....Minneapolis
Nordland, Martin.....Minneapolis
Noth, H. W.....Minneapolis
Nydahl, M. J.....St. Paul
Nylander, E. G.....Minneapolis
Nystrom, Ruth.....Minneapolis
Oberg, C. M.....Minneapolis
O'Brien, W. A.....Minneapolis
O'Donnell, J. E.....Minneapolis
Olsen, E. G.....Minneapolis
Olson, A. C.....Minneapolis
Olson, F. A.....Minneapolis
Olson, O. A.....Minneapolis
Olson, R. G.....Minneapolis
Oppen, E. G.....Minneapolis
Owre, Oscar.....Minneapolis
Paine, J. R.....Minneapolis
Patterson, W. E.....Minneapolis
*Paulsen, E. L.....Minneapolis
Pederson, R. M.....Minneapolis

Pennington, Reuben.....Minneapolis
Peppard, T. A.....Minneapolis
Petersen, J. R.....Minneapolis
Petersen, Thorvald.....Minneapolis
Peterson, Henry.....Minneapolis
Peterson, H. O.....Minneapolis
Peterson, H. W.....Minneapolis
Peterson, N. P.....Minneapolis
Peterson, O. H.....Minneapolis
Peterson, P. E.....Minneapolis
Peterson, W. C.....Minneapolis
Petit, L. J.....Minneapolis
Peyton, W. T.....Minneapolis
Pfunder, M. C.....Minneapolis
Phelps, K. A.....Minneapolis
Platou, E. S.....Minneapolis
Pohl, J. F.....Minneapolis
Pollard, D. W.....Minneapolis
Pollock, D. K.....Minneapolis
Polzak, J. A.....Minneapolis
Poppe, F. H.....Minneapolis
Pratt, F. J.....Minneapolis
Pratt, J. A.....Minneapolis
Preine, I. A.....Minneapolis
Prim, J. A.....Minneapolis
Proshek, C. E.....Minneapolis

Quello, R. O. B.....Minneapolis
Quinby, T. F.....Minneapolis
Quist, H. W.....Minneapolis

Rasmussen, R. C.....Minneapolis
Rea, C. E.....Minneapolis
Reed, C. A.....Minneapolis
Regnier, E. A.....Minneapolis
Rewbridge, A. G.....Minneapolis
Reynolds, J. S.....Minneapolis
Rice, C. O.....Minneapolis
Richardson, F. S.....Minneapolis
Richdorf, L. F.....Minneapolis
Rieke, W. W.....Wayzata
Rigler, L. G.....Minneapolis
Risch, R. E.....Minneapolis
Rishmiller, J. H.....Minneapolis
Rizer, R. I.....Minneapolis
Roan, C. M.....Minneapolis
Robb, E. F.....Minneapolis
Robbins, O. F.....Minneapolis
Roberts, T. S.....Minneapolis
Roberts, W. B.....Minneapolis
Robitshek, E. C.....Minneapolis
Rochford, W. E.....Minneapolis
Rodda, F. C.....Minneapolis
Rosen, Samuel.....Minneapolis
Rosenwald, R. M.....Minneapolis
Roskilly, G. C. P.....Minneapolis
Ross, A. J.....Minneapolis
Rucker, W. H.....Minneapolis
Rud, N. E.....Minneapolis
Rudell, G. L.....Minneapolis
Russeth, A. N.....Minneapolis
Rusten, E. M.....Minneapolis

Sadler, W. P.....Minneapolis
St. Cyr, K. J.....Osseo
Salt, C. G.....Minneapolis
Samuelson, Samuel.....Minneapolis
Sandt, K. E.....Minneapolis
Sawatzky, W. A.....Minneapolis
Schaaf, F. H. K.....Minneapolis
Schaefer, W. G.....Minneapolis
Scheldrup, N. H.....Minneapolis
Scherer, L. R.....Minneapolis
Schiele, B. C.....Minneapolis
Schmidt, G. F.....Minneapolis
Schmitt, A. F.....Minneapolis
Schmitt, S. C.....Los Angeles, Calif.
Schneider, J. P.....Minneapolis
Schneidman, N. R.....Minneapolis
Schottler, M. E.....Minneapolis
Schultz, P. J.....Minneapolis
Schussler, O. F.....Minneapolis
Schwartz, V. J.....Minneapolis
Schwyzer, Gustav.....Minneapolis
Scott, F. H.....Minneapolis
Scott, H. G.....Minneapolis
Seashore, Gilbert.....Minneapolis
Seham, Max.....Minneapolis
Seifert, M. H.....Excelsior
Seljeskog, S. R.....Minneapolis
Selleseth, I. F.....Minneapolis
Sessions, J. C.....Minneapolis
Shaperman, Eva P.....Minneapolis
Shapiro, M. J.....Minneapolis
Sharp, D. V.....Minneapolis
Siegmann, W. C.....Minneapolis
Silver, J. D.....Minneapolis
Simons, J. H.....Minneapolis
Simonson, D. B.....Minneapolis
Simpson, E. D.....Minneapolis
Siperstein, D. M.....Minneapolis
Sivertsen, Andrew.....Mound
Sivertsen, Ivar.....Minneapolis
Skjold, A. C.....Minneapolis
Sloan, Julius.....Minneapolis
Smisek, F. M.....Minneapolis
Smith, A. E.....Minneapolis
Smith, A. M.....Minneapolis
Smith, Archie M.....Minneapolis
Smith, H. R.....Minneapolis
Smith, N. M.....Minneapolis
Soderlind, R. T.....Minneapolis
Solhaug, S. B.....Minneapolis
Spano, J. P.....Minneapolis
Sperling, Louis.....Minneapolis
Spink, W. M.....Minneapolis
Spratt, C. N.....Minneapolis
Stanford, C. E.....Minneapolis
Stebbins, T. L.....Minneapolis
Stelter, L. A.....Minneapolis
Stenstrom, Annette T.....Minneapolis
Stewart, C. A.....Minneapolis
Stewart, R. I.....Minneapolis
Stoesser, A. V.....Minneapolis
Stomel, Joseph.....Los Angeles, Calif.
Strachauer, A. C.....Minneapolis
Stromgren, D. T.....Minneapolis
*Strout, E. S.....Minneapolis
Strout, G. E.....Minneapolis
Sturre, J. R.....Minneapolis
Sullivan, R. M.....Minneapolis
Sullivan, R. R.....Minneapolis
Sundt, Mathias.....Minneapolis
Swanson, Cephas.....Minneapolis
Swanson, R. E.....Minneapolis
Sweetser, H. B., Jr.....Minneapolis
Sweetser, H. B., Sr.....Minneapolis
Sweetser, T. H.....Minneapolis
Sweitzer, S. E.....Minneapolis
Swendseen, C. G.....Minneapolis

Taylor, J. H.....Minneapolis
Thomas, G. E.....Minneapolis
Thomas, G. H.....Minneapolis
Thomas, G. J.....Minneapolis
Thysell, D. M.....Minneapolis
Tingdale, A. C.....Minneapolis
Trueman, H. S.....Minneapolis
Tunstead, H. J.....Minneapolis
Turnacliff, D. D.....Minneapolis
Tyrrell, C. C.....Minneapolis

Ude, W. H.....Minneapolis
Ulrich, H. L.....Minneapolis
Undine, C. A.....Minneapolis

Vik, A. E.....Minneapolis

Wahlquist, H. F.....Minneapolis
Walch, A. E.....Minneapolis
Waldron, C. W.....Minneapolis
Wall, C. R.....Minneapolis
Wangensteen, O. H.....Minneapolis
Wanous, E. Z.....Minneapolis
Ward, A. W.....Minneapolis
Ward, P. A.....Minneapolis
Warham, T. T.....Minneapolis
Watson, B. A.....Minneapolis
Watson, C. J.....Minneapolis
*Watson, J. A.....Minneapolis
Webb, R. C.....Minneapolis
Weisman, S. A.....Minneapolis
Wethall, A. G.....Minneapolis
Wetherby, Macnider.....Minneapolis
Weum, T. W.....Minneapolis
White, A. A.....Minneapolis
White, S. M.....Minneapolis
White, W. D.....Minneapolis
Whitesell, L. A.....Minneapolis
Widen, W. F.....Minneapolis
Wilcox, A. E.....Minneapolis
Wildebush, F. F.....Minneapolis
Wilder, K. W.....Minneapolis
Wilder, R. L.....Minneapolis
Wilken, P. A.....Minneapolis
Willcutt, C. E.....Minneapolis
Williams, Robert.....Minneapolis
Winer, L. H.....Minneapolis
Winther, Nora M. C.....Minneapolis
Wipperman, F. F.....Minneapolis
Witham, C. A.....Minneapolis
Wittich, F. W.....Minneapolis
Wohlrabe, A. A.....Minneapolis
Woodworth, Elizabeth.....Minneapolis
Wright, C. B.....Minneapolis
Wright, C. D.....Minneapolis
Wright, F. R.....Minneapolis
Wright, S. G.....Minneapolis
Wright, W. S.....Minneapolis
Wynne, H. M. N.....Minneapolis

Ylvisaker, R. S.....Minneapolis
Yoerg, O. W.....Minneapolis

Zaworski, E. A.....Minneapolis
Zierold, A. A.....Minneapolis
Ziskin, Thomas.....Minneapolis

KANDIYOHI-SWIFT-MEEKER COUNTY MEDICAL SOCIETY

Regular meetings, second Wednesday of month
Annual meeting, December
Number of Members: 29

President
Petersen, M. C.....Willmar
Secretary
Scofield, C. L.....Benson

Anderson, R. E.....Willmar
Arnson, J. M.....Benson
Beckjord, P. R.....Willmar
Branton, A. F.....Willmar
Branton, B. J.....Willmar
Brigham, Frank.....Watkins
Daignault, Oscar.....Benson
Danielson, K. A.....Litchfield
Danielson, Lennox.....Litchfield
Dowswell, W. J.....Kerkhoven
Frederickson, Alice C.....Willmar
Frederickson, G. U. Y.....Willmar
Frisch, F. P.....Willmar
Frost, E. H.....Willmar
Giere, S. W.....Benson
Hodapp, R. J.....Willmar
Jacobs, D. L.....Willmar
Jacobs, J. C.....Willmar
Jensen, H. H.....Atwater
Johnson, Hans.....Kerkhoven
Lutz, E. H.....Willmar
Macklin, W. E.....Litchfield
Petersen, M. C.....Willmar
Proeschel, R. K.....Willmar
Ripple, R. J.....New London
Scofield, C. L.....Benson
Telford, V. J.....Litchfield
Wilmot, C. A.....Litchfield
Wilmot, H. E.....Litchfield

LYON-LINCOLN COUNTY MEDICAL SOCIETY

Regular meetings, first Tuesday of month
Annual meeting, first Tuesday in October
Number of Members: 20

President
Erickson, A. O.....Ivanhoe
Secretary
Workman, W. G.....Tracy
Bossingham, O. N.....Lake Benton
Erickson, A. O.....Ivanhoe
Ford, B. C.....Marshall

*Deceased

Frank, J. E.....Marshall
Friedell, George.....Russell
Germo, Charles.....Balaton
Gray, F. D.....Marshall
Helferty, J. K.....Tracy
Hermanson, P. E.....Hendricks
Hoidale, A. D.....Tracy
Jacquot, G. L.....Marshall
Johnson, P. C.....Tyler
Monson, L. J.....Canby
Purves, G. H.....Lake Benton
Robertson, J. B.....Minneapolis
Smith, L. A.....Balaton
*Thordarson, Theodore.....Minneota
Vadheim, A. L.....Tyler
Valentine, W. H.....Tracy
Workman, W. G.....Tracy
Yaeger, W. W.....Marshall

McLEOD COUNTY MEDICAL SOCIETY

Regular meetings, first Wednesday of month
Annual meeting, January
Number of Members: 15

President
Jensen, A. M.....Brownton

Secretary
Sheppard, C. G.....Hutchinson

Clement, J. B.....Lester Prairie
Fine, B. A.....Winsted

Goss, H. C.....Glencoe
Jensen, A. H.....Hutchinson
Jensen, A. M.....Brownton
Langhoff, A. H.....Glencoe
Lippmann, E. W.....Hutchinson
McMahon, M. J.....Green Isle

Sahr, W. G.....Hutchinson
Schmidt, W. R.....Glencoe
Scholpp, O. W.....Hutchinson
Sheppard, C. G.....Hutchinson
Sheppard, P. E.....Hutchinson
Tinker, C. W.....Stewart
Trutna, T. J.....Silver Lake

MOWER COUNTY MEDICAL SOCIETY

Regular meetings, last Thursday of month excepting June, July and August
Annual meeting, Tuesday before last Thursday in November
Number of Members: 26

President
Thomson, J. M.....Brownsdale

Secretary
Leck, P. C.....Austin

Allen, A. W.....Austin
Allen, C. C.....Austin
Allen, H. B.....Austin
Cronwell, B. J.....Austin
Eckhardt, C. L.....Austin
Flanagan, L. G.....Austin

Grise, W. B.....Austin
*Hanson, E. C.....Austin
Havens, J. G. W.....Austin
Hegge, O. H.....Austin
Hegge, R. S.....Austin
Henslin, A. E.....Le Roy
Hertel, G. E.....Austin
Johnson, O. J.....Lyle
Leck, P. C.....Austin
Lommen, P. A.....Austin

McKenna, J. K.....Austin
Melzer, G. R.....Lyle
Mitchell, R. S.....Grand Meadow
Morrow, J. J.....Austin
Morse, M. P.....Le Roy
Robertson, P. A.....Austin
Schneider, P. J.....Adams
Schottler, G. J.....Dexter
Sheedy, C. L.....Austin
Sher, D. A.....Austin
Thomson, J. M.....Brownsdale

NICOLLET-LE SUEUR COUNTY MEDICAL SOCIETY

Regular meetings, April, September, and December
Annual meeting, December
Number of Members: 24

President
Grimes, B. P.....St. Peter

Secretary
Strathern, C. S.....St. Peter

Aitkens, H. B.....Le Center
Covell, W. W.....St. Peter
Curtis, R. A.....Le Center
Ericson, Swan.....Le Sueur

Freeman, G. H.....St. Peter
Grimes, B. P.....St. Peter
Hiniker, P. J.....Le Sueur
Holtan, Theodore.....Waterville
Johnson, H. C.....North Mankato
Kerschbaumer, Luisa.....St. Peter
Kolars, J. J.....Le Center
Lenander, M. E.....St. Peter
Miller, E. W.....St. Peter
Nilson, H. J.....North Mankato

Nissen, A. S.....St. Peter
Olmanson, E. G.....St. Peter
Olson, D. C.....Gaylord
Rossen, R. X.....Hastings
Sonnesyn, N. N.....Le Sueur
Strathern, C. S.....St. Peter
Strathern, F. P.....St. Peter
Traxler, F. J.....Henderson
Wohlrabe, C. F.....Nicollet
Wolner, O. H.....St. Peter

OLMSTED-HOUSTON-FILLMORE-DODGE COUNTY MEDICAL SOCIETY

Regular meetings, first Wednesday every odd month
Annual meeting, November
Number of Members: 431

President
Pemberton, J. deJ.....Rochester

Secretary
Anderson, M. J.....Rochester

Adams, R. C.....Rochester
Adson, A. W.....Rochester
Ahlfs, Jacob.....Caledonia
Allen, E. V.....Rochester
Alvarez, W. C.....Rochester
Amberg, Samuel.....Rochester
Anderson, M. J.....Rochester
Anderson, N. E.....Harmony
Arny, F. P.....Preston
Autry, D. H.....Rochester

Baggenstoss, A. H.....Rochester
Bagwell, J. S., Jr.....Rochester
Bailey, A. A.....Rochester
Bair, H. L.....Rochester
Baker, G. S.....Rochester
Baker, H. R.....Hayfield
Baker, R. L.....Hayfield
Baker, Theodore, Jr.....Rochester
Balfour, D. C.....Rochester
Bargen, J. A.....Rochester
Barker, N. W.....Rochester
Barnes, A. R.....Rochester
Barrett, R. H.....Rochester
Basom, W. C.....Rochester
Beizer, L. H.....Rochester
Belote, G. B.....Caledonia
Benedict, W. L.....Rochester
Bennett, R. L.....Rochester
Berkman, D. M.....Rochester
Berkman, J. M.....Rochester
Bickel, W. H.....Rochester
Bigelow, C. E.....Dodge Center
Binger, M. W.....Rochester
Birge, R. F.....Rochester
Black, B. M.....Rochester
Black, J. R.....Rochester
Boothby, W. M.....Rochester
Bowing, H. H.....Rochester

Braasch, W. F.....Rochester
Broders, A. C.....Rochester
Brown, A. E.....Rochester
Brown, G. E., Jr.....Rochester
Brown, H. A.....Rochester
Brown, H. O.....Rochester
Brown, J. R.....Rochester
Brown, P. W.....Rochester
Browne, H. C., Jr.....Rochester
Brumm, H. J.....Rochester
Brunsting, L. A.....Rochester
Buie, L. A.....Rochester
Burchell, H. B.....Rochester
Butt, H. R.....Rochester
Cabell, C. L.....Rochester
Cameron, D. M.....Rochester
Camp, J. D.....Rochester
Campbell, D. C.....Rochester
Canfield, W. W.....Houston
Chapman, A. S.....Rochester
Chauncey, L. R.....Rochester
Cherry, J. H.....Rochester
Clagett, O. T.....Rochester
Clark, L. W.....Spring Valley
Clegg, R. S.....Rochester
Cleveland, W. H.....Rochester
Clifton, T. A.....Chatfield
Colyer, G. E.....Rochester
Comfort, M. W.....Rochester
Condon, W. B.....Rochester
Conner, H. M.....Rochester
Conway, J. F.....Rochester
Cook, E. N.....Rochester
Counseller, V. S.....Rochester
Coventry, M. B.....Rochester
Cragg, R. W.....Rochester
Craig, W. McK.....Rochester
Crenshaw, J. L.....Rochester
Crewe, J. E.....Rochester
Crumpacker, L. K.....Rochester
Cunningham, B. P.....Rochester
Cusick, P. L.....Rochester
Darling, J. P.....Rochester
Davis, A. C.....Rochester
Davis, I. G.....Rushford
Day, Lois.....Rochester

Dearing, W. H.....Rochester
Delmonico, E. J.....Rochester
Derbyshire, R. C.....Rochester
Desjardins, A. U.....Rochester
Dix, C. R.....Rochester
Dixon, C. F.....Rochester
Dockerty, M. B.....Rochester
Doehring, P. C.....Rochester
Dolder, F. C.....Eyota
Donald, C. J., Jr.....Rochester
Dorton, H. E.....Rochester
Doss, A. K.....Rochester
Drake, F. A.....Lanesboro
Drips, Della G.....Rochester
Dry, T. J.....Rochester
Dublin, William.....Rochester
Eaton, L. McK.....Rochester
Eginton, C. T.....Rochester
Elkins, E. C.....Rochester
Emmett, J. L.....Rochester
Engle, D. E.....Rochester
English, J. P.....Rochester
Erich, J. B.....Rochester
Evarts, A. B.....Rochester
Eusterman, G. B.....Rochester
Faber, J. E.....Rochester
*Fawcett, C. E.....Stewartville
Feldman, F. M.....Rochester
Ferris, D. O.....Rochester
Fiel, Charles, Jr.....Rochester
Figi, F. A.....Rochester
Fishback, C. F.....Rochester
Fisher, H. C.....Rochester
Fricke, R. E.....Rochester
Friedall, M. T.....Rochester
Gaarde, F. W.....Rochester
Gardner, J. W.....Rochester
Ghormley, R. K.....Rochester
Giffin, H. M.....Rochester
Giffin, H. Z.....Rochester
Giffin, I. A.....Rochester
Good, C. A., Jr.....Rochester
Goodson, W. H., Jr.....Rochester
Gore, H. R.....Rochester
Graham, R. W.....Rochester
Grandy, A. Margaret.....Rochester

*Deceased

Gray, H. K. ..... Rochester
Greene, L. F. ..... Rochester
Gregg, R. O. ..... Rochester
Grindlay, J. H. ..... Rochester
Groff, J. E. ..... Rochester
Habein, H. C. ..... Rochester
Haines, S. F. ..... Rochester
Haisten, A. S. ..... Rochester
Hall, B. E. ..... Rochester
Hallenbeck, D. F. ..... Rochester
Hammer, H. J. ..... Rochester
Hargis, W. H., Jr. ..... Rochester
Hargraves, M. M. ..... Rochester
Harley, R. D. ..... Rochester
Harper, S. B. ..... Rochester
Harrington, S. W. ..... Rochester
Harrison, M. W. ..... Rochester
Hartman, H. R. ..... Rochester
Havens, F. Z. ..... Rochester
Hawn, H. W. ..... Rochester
Hayden, R. O. ..... Rochester
Heck, F. J. ..... Rochester
Heersema, P. H. ..... Rochester
Heilman, Charles ..... Rochester
Heilman, Dorothy M. H. ..... Rochester
Heilman, F. R. ..... Rochester
Helland, G. M. ..... Spring Grove
Helland, J. W. ..... Spring Grove
Helmholz, H. F. ..... Rochester
Hempstead, B. E. ..... Rochester
Hench, P. S. ..... Rochester
Henderson, J. W. ..... Rochester
Henderson, M. S. ..... Rochester
Herrell, W. E. ..... Rochester
Hertz, C. S. ..... Rochester
Hewitt, R. M. ..... Rochester
Heyerdale, O. C. ..... Rochester
Heyerdale, W. W. ..... Rochester
Hildebrand, Alice G. ..... Rochester
Hill, J. R. ..... Rochester
Hines, E. A., Jr. ..... Rochester
Hinshaw, H. C. ..... Rochester
Hoffmann, H. O. E. ..... Rochester
Hollister, C. B. H. ..... Rochester
Horton, B. T. ..... Rochester
Howe, R. F. ..... Rochester
Howell, L. P. ..... Rochester
Hummer, G. J. ..... Rochester
Hunt, A. B. ..... Rochester
Jackman, R. J. ..... Rochester
Jenovese, J. F. ..... Rochester
Jensen, R. M. ..... Rochester
Johnson, H. P. ..... Harmony
Johnson, R. B. ..... Lanesboro
Joyce, G. L. ..... Rochester
Judd, E. S. ..... Rochester
Jump, W. C. ..... Kasson
Kapernick, J. S. ..... Rochester
Kearney, R. W. ..... Rochester
Keating, F. R., Jr. ..... Rochester
Keith, H. M. ..... Rochester
Keith, N. M. ..... Rochester
Kennedy, R. L. J. ..... Rochester
Kepler, E. J. ..... Rochester
Kernohan, J. W. ..... Rochester
Kershner, C. M. ..... Rochester
Kibler, J. M. ..... Rochester
Kierland, R. R. ..... Rochester
Killins, J. A. ..... Rochester
Kimmel, J. C., Jr. ..... Rochester
Kindschi, Leslie ..... Rochester
King, H. E. ..... Rochester
King, W. L. M. ..... Rochester
Kirklin, B. R. ..... Rochester
Kirklin, O. L. ..... Rochester
Koelsche, G. A. ..... Rochester
Kowallis, G. F. ..... Rochester
Krusen, F. H. ..... Rochester
Kvale, W. F. ..... Rochester
Kyser, F. A. ..... Rochester
Lander, H. H. ..... Rochester
Lannin, J. C. ..... Mabel
Leary, W. V. ..... Rochester
Leddy, E. T. ..... Rochester
Leffel, J. M., Jr. ..... Rochester
Lemon, W. S. ..... Rochester
Lewis, E. B. ..... Rochester
Lien, R. J. ..... Rochester
Lillie, H. I. ..... Rochester
Little, A. G. ..... Rochester
Little, E. H. ..... Rochester
Lipscomb, P. R. ..... Rochester
Lloyd, S. J. ..... Rochester
Lochead, D. C. ..... Rochester
Lockwood, W. W. ..... Fort Peck, Mont.
Logan, A. H. ..... Rochester
Logan, G. B. ..... Rochester
Love, J. G. ..... Rochester
Love, W. R. ..... Rochester
Lovelace, W. R. ..... Rochester

Lovelady, S. B. ..... Rochester
Lundy, J. S. ..... Rochester
Luden, Georgine ..... Victoria, B. C., Can.
Lynch, R. C. ..... Rochester
MacCarty, W. C. ..... Rochester
Macey, H. B. ..... Rochester
MacKay, A. R. ..... Rochester
MacLean, A. R. ..... Rochester
Madding, G. F. ..... Rochester
Mader, J. W., Jr. ..... Rochester
Magath, T. B. ..... Rochester
Maino, C. R. ..... Rochester
Mann, F. C. ..... Rochester
Masson, D. M. ..... Rochester
Masson, J. C. ..... Rochester
*Mayo, C. H. ..... Rochester
Mayo, C. W. ..... Rochester
*Mayo, W. J. ..... Rochester
Maytum, C. K. ..... Rochester
McCallig, J. J. ..... Rochester
McCannel, D. A. ..... Rochester
McCullough, J. A. L. ..... Rochester
McDonald, J. R. ..... Rochester
McDonough, F. E. ..... Rochester
McHeffey, G. J. ..... Rochester
McKaig, C. B. ..... Pine Island
McKean, R. S. ..... Rochester
McKinnon, D. A., Jr. ..... Rochester
McLoughlin, C. J. ..... Rochester
McManamy, E. P. ..... Rochester
Merritt, W. A. ..... Rochester
Meyerding, H. W. ..... Rochester
Miller, J. M. ..... Rochester
Moersch, F. P. ..... Rochester
Moersch, H. J. ..... Rochester
Montgomery, Hamilton ..... Rochester
Morissette, Leopold ..... Rochester
Morlock, C. G. ..... Rochester
Mountain, G. E. ..... Rochester
Mousel, L. H. ..... Rochester
Mulrooney, R. E. ..... Rochester
Munn, Elizabeth L. ..... Rochester
Mussey, R. D. ..... Rochester
Nash, L. A. ..... Rochester
Nass, H. A. ..... Mabel
Neel, H. B. ..... Rochester
Nehring, J. P. ..... Preston
Nesbitt, Samuel ..... Rochester
New, G. B. ..... Rochester
Nickel, W. R. ..... Rochester
Norris, N. T. ..... Caledonia
O'Brien, J. P. ..... Rochester
Odel, H. M. ..... Rochester
Olds, J. W. ..... Rochester
O'Leary, P. A. ..... Rochester
Olsen, A. M. ..... Rochester
Olson, E. A. ..... Pine Island
Olson, G. E. ..... West Concord
Onsgard, L. K. ..... Houston
Pansch, F. N. ..... Rochester
Parker, R. L. ..... Rochester
Parkhill, Edith M. ..... Rochester
Pastore, P. N. ..... Rochester
Pattison, D. H. ..... Rochester
Patton, G. D. ..... Pittsburgh, Pa.
Paulson, D. L. ..... Rochester
Paulson, J. A. ..... Rochester
Pearman, R. O. D. ..... Rochester
Pemberton, J. deJ. ..... Rochester
Pennington, R. E. ..... Rochester
Perozzi, Thelma ..... Santa Barbara, Calif.
Peters, G. A. ..... Rochester
Peterson, W. G. ..... Rochester
Phalen, G. S. ..... Rochester
Phillips, R. B. ..... Rochester
Piper, M. C. ..... Rochester
Plimpton, N. C., Jr. ..... Rochester
Plummer, W. A. ..... Rochester
Pollock, G. A. ..... Rochester
Pollock, L. W. ..... Rochester
Pool, T. L. ..... Rochester
Popp, W. C. ..... Rochester
Powers, F. H. ..... Rochester
Prangen, A. D. ..... Rochester
Prickman, L. E. ..... Rochester
Priestley, J. T. ..... Rochester
Prunty, F. C. ..... Rochester
Pugh, D. G. ..... Rochester
Quill, T. H. ..... Rochester
Ralph, R. D. ..... Rochester
Randall, K. C., II ..... Rochester
Randall, L. M. ..... Rochester
Rasmussen, T. B. ..... Montreal, Can.
Rasmussen, W. C. ..... Rochester
Raszkowski, H. J. ..... Rochester
Redding, M. D. ..... Rochester
Reeser, R. J. ..... Rochester
Rein, G. N. ..... Rochester
Richardson, R. I. ..... Rushford
Richardson, W. E. ..... Rushford
Risser, A. F. ..... Stewartville
Rivers, A. B. ..... Rochester
Robertson, H. E. ..... Rochester

Robinson, F. J. ..... Rochester
Rogne, W. G. ..... Spring Grove
Rosenberg, E. F. ..... Rochester
Rosenow, E. C. ..... Rochester
Rosenow, E. C., Jr. ..... Rochester
Rosentiel, H. C. ..... Rochester
Rucker, C. W. ..... Rochester
Rushton, J. G. ..... Rochester
Rutledge, D. I. ..... Rochester
Rynearson, E. H. ..... Rochester
Sanford, A. H. ..... Rochester
Scheifley, C. H. ..... Rochester
Schlicke, C. P. ..... Rochester
Schmidt, H. W. ..... Rochester
Schmitt, G. F., Jr. ..... Rochester
Schneider, H. H. ..... Rochester
Schulte, T. L. ..... Rochester
Schunke, G. B. ..... Rochester
Schwartz, E. R. ..... Stewartville
Schweiger, L. R. ..... Rochester
Sealy, W. B. ..... Rochester
Seedorf, E. E. ..... Rochester
Seldon, T. H. ..... Rochester
Sharpe, W. S. ..... Rochester
Shelden, W. D. ..... Rochester
Sheldon, C. H. ..... Rochester
Shepard, V. D. ..... Rochester
Simonton, K. M. ..... Rochester
Skaug, H. M. ..... Chatfield
Slocumb, C. H. ..... Rochester
Smith, B. F. ..... Rochester
Smith, F. D. ..... Rochester
Smith, F. A. ..... Rochester
Smith, F. L. ..... Rochester
Smith, H. L. ..... Rochester
Smith, K. A. ..... Rochester
Smith, L. A. ..... Rochester
Smith, N. D. ..... Rochester
Smith, R. L., Jr. ..... Rochester
Snell, A. M. ..... Rochester
Snyder, J. M. ..... Rochester
Soniat, T. L. L. ..... Rochester
Sprague, R. G. ..... Rochester
Squire, E. W. ..... Rochester
Stafford, D. E. ..... Rochester
Stalker, L. K. ..... Rochester
Stickney, J. M. ..... Rochester
Stuhler, L. G. ..... Rochester
Sutherland, C. G. ..... Rochester
Swartz, F. C. ..... Rochester
Swingle, H. F., Jr. ..... Rochester
Tenner, R. J. ..... Rochester
Tennison, William, III ..... Rochester
Thigpen, F. M. ..... Rochester
Thompson, G. J. ..... Rochester
Tierney, C. M. ..... Harmony
Tischer, E. P. ..... Rochester
Tillisch, J. H. ..... Rochester
Tooke, T. B., Jr. ..... Rochester
Trandem, C. Elinor ..... Rochester
Tuohy, E. B. ..... Rochester
Twyman, R. A. ..... Rochester
Uihlein, Alfred ..... Rochester
Usher, F. C. ..... Rochester
Vadheim, J. L. ..... Rochester
Vaughn, L. D. ..... Rochester
Vickers, P. M. ..... Rochester
Wagener, H. P. ..... Rochester
Waggoner, R. P. ..... Rochester
Waisman, Morris ..... Rochester
Wakefield, E. G. ..... Rochester
Walsh, J. J. ..... Rochester
Walsh, M. N. ..... Rochester
Walters, Waltman ..... Rochester
Watkins, C. H. ..... Rochester
Waugh, J. M. ..... Rochester
Weber, H. M. ..... Rochester
Weir, J. F. ..... Rochester
Weismann, R. E. ..... Rochester
Westrup, J. E. ..... Rochester
Wiig, L. M. ..... Naperville, Ill.
Wilcox, L. E. ..... Rochester
Wilder, R. M. ..... Rochester
Williams, H. L. ..... Rochester
Williams, R. V. ..... Rushford
Willius, F. A. ..... Rochester
Willson, D. M. ..... Rochester
Wilson, L. B. ..... Rochester
Wilson, R. B. ..... Rochester
Wilson, W. H. ..... Rochester
Wollaeger, E. E. ..... Rochester
Woltman, H. W. ..... Rochester
Wood, B. J. ..... Rochester
Wood, H. G. ..... Rochester
Woodruff, C. W. ..... Chatfield
Woodruff, Robert ..... Rochester
Woods, R. M. ..... Rochester
Wozencraft, J. P. ..... Rochester
Wrork, D. H. ..... Rochester
Wulf, R. F. ..... Rochester
Yeager, C. L. ..... Rochester
Young, H. H. ..... Rochester

*Deceased.

PARK REGION DISTRICT AND COUNTY MEDICAL SOCIETY

Douglas, Grant, Otter Tail and Wilkin Counties

Regular meetings, Second Wednesday every other month

Annual meeting, December

Number of Members: 60

President

Lund, C. J. T. ..... Underwood

Secretary

Boline, C. A. ..... Battle Lake

Arndt, H. W. ..... Detroit Lakes
Baker, A. C. ..... Fergus Falls
Baker, N. H. ..... Fergus Falls
Bergquist, K. E. ..... Battle Lake
Blakey, A. R. ..... Osakis
Boline, C. A. ..... Battle Lake
Boyd, L. M. ..... Alexandria
Boysen, J. E. ..... Pelican Rapids
Boysen, Peter ..... Pelican Rapids
Broker, W. S. ..... Wadena
Burnap, W. L. ..... Fergus Falls
Clifford, G. W. ..... Alexandria
Combacker, L. C. ..... Fergus Falls
Drought, W. W. ..... Fergus Falls
Esser, John ..... Perham
Estrem, C. O. ..... Fergus Falls
Fisher, J. M. ..... Fergus Falls
Freeman, W. N. ..... Perham
Griswold, F. E. ..... Hoffman
*Hand, W. R. ..... Elbow Lake
Hanson, E. C. ..... New York Mills
Haskell, A. D. ..... Alexandria
Heiberg, E. A. ..... Fergus Falls
Jacobs, G. C. ..... Fergus Falls
Johnson, O. V. ..... Fergus Falls
Kierland, P. E. ..... Alexandria
Lee, W. A. ..... Fergus Falls
Leibold, H. H. ..... Parkers Prairie
Leighton, Robert ..... Evansville
Leland, J. T. ..... Herman
Lewis, A. J. ..... Henning
Love, F. A. ..... Carlos
Lund, C. J. T. ..... Underwood
McLane, W. O. ..... Perham
McMahon, L. H. ..... Breckenridge
Miller, W. A. ..... New York Mills
Mouritsen, G. J. ..... Fergus Falls
Naegeli, Frank ..... Fergus Falls
Nelson, W. O. B. ..... Fergus Falls
Otto, H. C. ..... Frazee
Parson, L. R. ..... Elbow Lake
Parson, Lillian B. ..... Elbow Lake
Patterson, W. L. ..... Fergus Falls
Paulson, T. S. ..... Fergus Falls
Paulson, E. C. ..... Dalton
Randall, A. M. ..... Ashby
Reeve, E. T. ..... Elbow Lake
Rimer, E. W. ..... Breckenridge
Satersmoen, Theodore .. Pelican Rapids
Sather, E. R. ..... Alexandria
Schamber, W. F. ..... Parkers Prairie
Schleinitz, F. B. ..... Battle Lake
Serkland, J. C. ..... Rothsay
Stemsrud, H. L. ..... Parkers Prairie
Sutton, H. R. ..... Hoffman
Tanquist, E. J. ..... Alexandria
Vail, J. B. ..... Henning
Warner, J. J. ..... Perham
Wasson, L. F. ..... Alexandria
Webster, L. J. ..... Battle Lake
Wray, W. E. ..... Campbell

RAMSEY COUNTY MEDICAL SOCIETY

Regular meetings, last Monday in every month excepting June, July, August

Annual meeting, last Monday in January

Number of Members: 339

President

Ruhberg, G. N. ..... St. Paul

Secretary

Wilson, J. A. ..... St. Paul

Abbott, J. S. ..... St. Paul
Ahrens, A. E. ..... St. Paul
Ahrens, A. H. ..... St. Paul
Alberts, M. W. ..... St. Paul
Alden, J. F. ..... St. Paul
Alexander, F. H. ..... St. Paul
Armstrong, J. M. ..... St. Paul
Arnquist, A. S. ..... St. Paul
Aurelius, J. R. ..... St. Paul
Ausman, C. F. ..... St. Paul
Bacon, D. K. ..... St. Paul
Bacon, L. C. ..... St. Paul
Balcome, M. M. ..... St. Paul
Barry, L. W. ..... St. Paul
Barsness, Nellie O. N. ..... St. Paul
Beadie, W. D. ..... Cannon Falls
Beals, Hugh ..... St. Paul
Beech, R. H. ..... St. Paul
Beek, H. O. ..... St. Paul
Bell, C. C. ..... St. Paul
Benepe, J. L. ..... St. Paul
Bennion, P. H. ..... St. Paul
Bentley, N. P. ..... St. Paul
Berrisford, P. D. ..... St. Paul
Bicek, J. F. ..... St. Paul
Binger, H. E. ..... St. Paul
Birnberg, T. L. ..... St. Paul
Bock, R. A. ..... St. Paul
Boeckmann, Egil ..... St. Paul
*Bohland, E. H. ..... St. Paul
Bolender, H. L. ..... St. Paul
Borg, J. F. ..... St. Paul
Bouma, L. R. ..... St. Paul
Brand, G. D. ..... St. Paul
Bray, E. R. ..... St. Paul
Briggs, J. F. ..... St. Paul
Broadie, T. E. ..... St. Paul
Brodie, W. D. ..... St. Paul
Brown, E. I. ..... St. Paul
Brown, J. C. ..... St. Paul
Bulinski, T. J. ..... St. Paul
Burch, E. P. ..... St. Paul
Burch, F. E. ..... St. Paul
Burns, R. M. ..... St. Paul
Burton, C. G. ..... St. Paul
Busher, H. H. ..... St. Paul
Cain, C. L. ..... St. Paul
Caldwell, J. P. ..... St. Paul
Carroll, W. C. ..... St. Paul
Chatterton, C. C. ..... St. Paul
Christiansen, A. ..... St. Paul
Christison, J. T. ..... St. Paul
Clark, H. B., Jr. ..... St. Paul
Clark, T. C. ..... Minneapolis
Cochrane, B. B. ..... St. Paul
Colby, W. L. ..... St. Paul
Cole, W. H. ..... St. Paul
Collie, H. G. ..... St. Paul
Colvin, A. R. ..... St. Paul
Connor, C. E. ..... St. Paul
Cook, C. K. ..... St. Paul
Cooper, C. C. ..... St. Paul
Countryman, R. S. ..... St. Paul
Cowern, E. W. ..... North St. Paul
Critchfield, L. R. ..... St. Paul
Culligan, J. M. ..... St. Paul
Dack, L. G. ..... St. Paul
Daugherty, E. B. .. Marine-on-St. Croix
Daugherty, L. E. ..... St. Paul
Davis, Herbert ..... St. Paul
Davis, William ..... St. Paul
DeCourcey, D. M. ..... St. Paul
Dedolph, Karl ..... St. Paul
Delavan, P. A. ..... St. Paul
Derauf, B. I. ..... St. Paul
Dickson, T. H. ..... St. Paul
Dittman, G. C. ..... St. Paul
Donohue, P. F. ..... St. Paul
Dovre, C. M. ..... St. Paul
Drake, C. B. ..... St. Paul
Dunn, J. N. ..... St. Paul
Earl, George ..... St. Paul
Earl, John ..... St. Paul
Earl, Robert ..... St. Paul
Edlund, G. ..... St. Paul
Edwards, J. W. ..... St. Paul
Edwards, T. J. ..... St. Paul
Ely, O. S. ..... South St. Paul
Emerson, E. C. ..... St. Paul
Endress, E. K. ..... St. Paul
Ernest, G. C. H. ..... South St. Paul
Eshelby, E. C. ..... St. Paul
Fahey, E. W. ..... St. Paul
Ferguson, J. C. ..... St. Paul
Fesler, H. H. ..... St. Paul
Flanagan, H. F. ..... St. Paul
Fogarty, C. W. ..... St. Paul
Fogelberg, E. J. ..... St. Paul
Foley, F. E. B. ..... St. Paul
Freeman, C. D. ..... St. Paul
Freidman, L. L. ..... St. Paul
Fritz, W. L. ..... St. Paul
Froats, C. W. ..... St. Paul
Gager, E. C. ..... St. Paul
Garbrecht, Arthur ..... St. Paul
Gardiner, D. G. ..... St. Paul
Geer, E. K. ..... St. Paul
Gehlen, J. N. ..... St. Paul
Geist, G. A. ..... St. Paul
Ghent, C. H. ..... St. Paul
Gibbs, E. C. ..... St. Paul
Gilfillan, J. S. ..... St. Paul
Gilkey, S. E. ..... St. Paul
Ginsberg, Wm. ..... St. Paul
Goltz, E. V. ..... St. Paul
Grant, H. W. ..... St. Paul
Gratzek, Thomas ..... St. Paul
Grau, R. K. ..... St. Paul
Gruenhagen, A. P. ..... St. Paul
Hagaman, G. K. ..... St. Paul
Hall, A. R. ..... St. Paul
Hall, H. H. ..... St. Paul
Hammes, E. M. ..... St. Paul
Hammond, J. F. ..... St. Paul
Hanson, H. B. ..... St. Paul
Harmon, G. E. ..... St. Paul
Hartfiel, W. F. ..... St. Paul
Hartley, E. C. ..... St. Paul
Hassett, M. F. ..... St. Paul
Hauser, V. P. ..... St. Paul
Hawkins, V. J. ..... St. Paul
Heath, A. C. ..... Stillwater
Heck, W. W. ..... St. Paul
Hedenstrom, F. G. ..... St. Paul
Hengstler, W. H. ..... St. Paul
Hensel, C. N. ..... St. Paul
Herman, Samuel ..... St. Paul
Heron, R. C. ..... St. Paul
Herrmann, E. T. ..... St. Paul
Hilger, A. W. ..... St. Paul
Hilger, D. D. ..... St. Paul
Hilger, L. A. ..... St. Paul
Hilleboe, H. E. ..... St. Paul
Hiniker, L. P. ..... St. Paul
Hochfilzer, J. J. ..... St. Paul
Hoff, Alfred ..... St. Paul
Hoffman, M. H. ..... St. Paul
Holcomb, J. T. ..... St. Paul
Holcomb, O. W. ..... St. Paul
Holmen, R. W. ..... St. Paul
Holt, J. E. ..... St. Paul
Hopkins, G. W. ..... St. Paul
Howard, M. A. ..... St. Paul
Howard, W. S. ..... St. Paul
Hullsiek, R. B. ..... St. Paul
Ide, A. W. ..... St. Paul
Ikeda, Kano ..... St. Paul
Ingerson, C. A. ..... St. Paul
Jesion, J. W. ..... St. Paul
Johanson, W. G. ..... St. Paul
Johnson, A. M. ..... St. Paul
Johnson, C. E. ..... St. Paul
Johnson, J. A. ..... St. Paul
Johnson, T. H. .. San Francisco, Calif.
Jones, E. M. ..... St. Paul
Kamman, G. R. ..... St. Paul
Kannary, E. L. ..... St. Paul
Kaplan, D. H. ..... St. Paul
Kasper, E. M. ..... St. Paul
Keefe, Rolland ..... St. Paul
Kelly, J. V. ..... St. Paul
Kelly, P. H. ..... St. Paul
Kenefick, E. V. ..... St. Paul
Kennedy, W. A. ..... St. Paul
Kenyon, T. J. ..... St. Paul
Kesting, Herman ..... St. Paul
King, G. L. ..... St. Paul
Klein, H. N. ..... St. Paul
Knauff, M. K. ..... St. Paul
Koepsell, A. A. H. ..... St. Paul
Kugler, A. ..... St. Paul
Kvitrud, Gilbert ..... St. Paul
Langenderfer, F. V. ..... St. Paul
Larsen, C. L. ..... St. Paul
Lax, M. H. ..... St. Paul
Leahy, Bartholomew ..... St. Paul
Leavenworth, R. O. ..... St. Paul
Leick, R. M. ..... St. Paul

*Deceased.

Leitch, Archibald.....St. Paul
Lepak, J. A.....St. Paul
Lerche, William.....Cable, Wis.
Leven, N. L.....St. Paul
Levin, Bert.....St. Paul
Levitt, G. X.....St. Paul
Lick, C. L.....St. Paul
Lippman, H. S.....St. Paul
Little, W. J.....St. Paul
Lowe, E. R.....South St. Paul
Lowe, T. A.....South St. Paul
Lundholm, A. M.....St. Paul
Lynch, F. W.....St. Paul
Madden, J. F.....St. Paul
Markoe, J. C.....St. Paul
Marks, R. W.....St. Paul
Martineau, J. L.....St. Paul
Mattson, C. H.....St. Paul
Maun, M. E.....St. Paul
McCann, E. J.....St. Paul
McCarthy, J. J.....St. Paul
McCarthy, W. R.....St. Paul
McClanahan, J. H.....White Bear
McClanahan, T. S.....White Bear
McLaren, Jennette M.....Minneapolis
McNevin, C. F.....St. Paul
Meade, J. R.....St. Paul
Mears, B. J.....St. Paul
Medelman, J. P.....St. Paul
Meyerding, E. A.....St. Paul
Moga, J. A.....St. Paul
Molander, H. A.....St. Paul
Moquin, Marie A.....St. Paul
Moriarty, Berenice.....St. Paul
Morrissey, F. B.....St. Paul
Moss, M. N.....St. Paul
*Moynihan, T. J.....St. Paul
Muller, R. T.....St. Paul
Myers, Thomas.....St. Paul
Naegeli, A. E.....St. Paul
Naslund, A. W.....St. Paul
*Neher, F. H.....St. Paul
Nelson, K. L.....Minneapolis
Nelson, L. A.....St. Paul
Nichols, A. E.....St. Paul
Noble, J. F.....St. Paul
Noble, J. L.....St. Paul
Nuebel, C. J.....St. Paul
Nye, Katherine A.....St. Paul
Nye, Lillian L.....St. Paul
O'Brien, W. M.....St. Paul
O'Connor, L. J.....St. Paul
Oerting, Harry.....St. Paul
Ogden, Warner.....St. Paul
Ohage, Justus, Jr.....St. Paul
Olson, C. A.....St. Paul
O'Reilley, B. E.....St. Paul
Ostergren, E. W.....St. Paul
Ouelette, A. J.....St. Paul
Page, C. V.....St. Paul
Pearson, F. R.....St. Paul
Perry, C. G.....St. Paul
Peterson, D. B.....St. Paul
Peterson, J. L. E.....St. Paul
Peterson, V. N.....St. Paul
Plondke, F. J.....St. Paul
Prendergast, H. J.....St. Paul
Prendergast, J. J.....St. Paul
Radabaugh, R. C.....Hastings
Ramsey, W. R.....St. Paul
Richards, E. T. F.....St. Paul
Richardson, H. E.....St. Paul
Rick, P. F. W.....St. Paul
Ritchie, H. P.....St. Paul
Ritchie, W. P.....St. Paul
Ritt, A. E.....St. Paul
Rogers, S. F.....St. Paul
Rosenbladt, Louis.....St. Paul
Rosenholtz, Burton.....St. Paul
Rosenthal, Robert.....St. Paul
Rothrock, J. L.....St. Paul
Rothschild, H. J.....St. Paul
Roy, P. C.....St. Paul
Ruhberg, G. N.....St. Paul
Rutherford, W. C.....St. Paul
Ryan, J. J.....St. Paul
Ryan, J. M.....St. Paul
Ryan, M. E.....St. Paul
Sarnecki, M. M.....St. Paul
Satterlund, V. L.....St. Paul
Savage, F. J.....St. Paul
Schoch, R. B. J.....St. Paul
Schons, Edward.....St. Paul
Schuldt, F. C.....St. Paul
Schulze, A. G.....St. Paul
Schwyzer, Arnold.....St. Paul
Scott, E. E.....St. Paul
Senkler, G. E.....St. Paul
Setzer, H. J.....St. Paul
Shellman, J. L.....St. Paul
Shillington, M. A.....Glendive, Mont.
Shimonek, S. W.....St. Paul
Short, Jacob.....St. Paul
Simons, L. T.....St. Paul
Singer, B. J.....St. Paul
Skinner, H. O.....St. Paul
Smisek, E. A.....St. Paul
Smith, V. D. E.....St. Paul
Snyder, G. W.....St. Paul
Sohlberg, O. I.....St. Paul
Souster, B. B.....St. Paul
Sprafka, J. M.....St. Paul
Steinberg, C. L.....St. Paul
Sterner, E. G.....St. Paul
Sterner, E. R.....St. Paul
Steube, R. W.....St. Paul
Stewart, Alexander.....St. Paul
Stinnette, S. E.....St. Paul
Stoeckmann, A. E.....St. Paul
Stolpestad, A. H.....St. Paul
Stolpestad, H. L.....St. Paul
Strate, G. E.....St. Paul
Strauss, M. L.....St. Paul
Swanson, J. A.....St. Paul
Swendson, J. J.....St. Paul
Teisberg, C. B.....St. Paul
Thompson, F. A.....St. Paul
Thoreson, M. O.....South St. Paul
Tifft, C. R.....St. Paul
Tregilgas, H. R.....South St. Paul
Van Slyke, C. A.....St. Paul
Veirs, Dean.....St. Paul
Veirs, Ruby S.....St. Paul
Venables, A. E.....St. Paul
Von der Weyer, William.....St. Paul
Waas, C. W.....St. Paul
Walker, A. E.....St. Paul
Walter, C. W.....St. Paul
Warnock, R. W.....St. Paul
Warren, C. A.....St. Paul
Warren, E. L.....St. Paul
Watz, C. E.....St. Paul
Webber, F. L.....St. Paul
Weisberg, Maurice .....St. Paul
Welch, M. C.....St. Paul
Wenzel, G. P.....St. Paul
Werner, O. S.....Cambridge
Wheeler, M. W.....St. Paul
Whitacre, J. C.....St. Paul
Whitmore, F. W.....St. Paul
Williams, A. B.....St. Paul
Williams, C. K.....St. Paul
Williamson, G. A.....St. Paul
Wilson, J. A.....St. Paul
Wilson, J. V.....St. Paul
Winnick, J. B.....St. Paul
Wold, K. C.....St. Paul
Wolfe, H. H.....St. Paul
Wolff, H. J.....St. Paul
Wolkoff, H. J.....St. Paul
Youngren, E. R.....St. Paul
Zachman, L. L.....St. Paul
Zander, C. H.....St. Paul
Zimmermann, H. B.....St. Paul

RED RIVER VALLEY MEDICAL SOCIETY

Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake and Roseau Counties
Regular meetings, second Tuesday every quarter
Annual meeting, second Tuesday, December
Number of Members: 61

President
Shedlov, Abraham .....Fosston

Secretary
Oppegaard, C. L.....Crookston

Adkins, C. M.....Thief River Falls
Anderson, W. E.....Thief River Falls
Anderson, W. S.....Minneapolis
Behr, O. K.....Crookston
Berge, D. O.....Roseau
Berlin, A. S.....Hallock
Bertelson, O. L.....Crookston
Biedermann, Jacob..Thief River Falls
Blegen, H. M.....Warren
Boardman, D. V.....Twin Valley
Bohl, G. W.....Ada
Borreson, Baldwin...Thief River Falls
Bratrud, Edward....Thief River Falls
Brink, A. A.....Baudette
Brown, L. L.....Crookston
Delmore, J. L., Jr.....Roseau
Delmore, J. L., Sr.....Roseau
Ederer, J. J.....Mahnomen
Erickson, Eskil.....Halstad
Furst, J. N.....Hallock
Griffin, P. J.....Fertile
Haugseth, Enoch.....Twin Valley
Hedemark, H. H.....Thief River Falls
Helseth, H. K.....Thief River Falls
Henney, W. H.....McIntosh
Hodgson, H. H.....Crookston
Hollands, W. H.....Fisher
Holmstrom, C. H.....Warren
Johnson, H. C.....Thief River Falls
Kirk, G. P.....East Grand Forks
Knutson, G. A.....Greenbush
Kostick, W. R.....Fertile
Leitch, N. M.....Warroad
Loken, Theodore.....Ada
Lynde, O. G.....Thief River Falls
Mellby, O. F.....Thief River Falls
Mercil, W. F.....Crookston
Morley, G. A.....Crookston
Nelson, H. E.....Crookston
Norman, J. F.....Crookston
Ohnstad, J. L.....McIntosh
Oppegaard, C. L.....Crookston
Oppegaard, M. O.....Crookston
Paradis, W. G.....Crookston
Parsons, J. G.....Crookston
Pellettiere, E. V.....Thief River Falls
Reff, A. R.....Crookston
Robertson, F. O.....East Grand Forks
Roy, J. A.....Red Lake Falls
Sather, Allen .....Fosston
Sather, G. O.....Fosston
Sather, R. O.....Crookston
Shaleen, A. W.....Hallock
Shedlov, Abraham.....Fosston
Stevens, John.....Gonvick
Stocking, F. F.....Hallock
Stuurmanns, S. H.....Erskine
Tanglin, W. G. L.....Mahnomen
Torgerson, W. B.....Oklee
Uhley, C. G.....Crookston
Weed, V. A.....Red Lake Falls

REDWOOD-BROWN COUNTY MEDICAL SOCIETY

Regular meetings, February, May, August, and November
Annual meeting, May
Number of Members: 31

President
Fritsche, C. J.....New Ulm

Secretary
Saffert, Cornelius A.....New Ulm

*Deceased.

Abbott, C. B.....Springfield
Anderson, E. M.....Lamberton
Benton, P. C.....Gibbon
Brey, F. W.....Wabasso
Cairns, R. J.....Sanborn
Dubbe, F. H.....New Ulm
Dysterheft, A. F.....Gaylord
Esser, O. J.....Gibbon
Fesenmaier, O. B.....New Ulm
Fritsche, Albert.....New Ulm
Fritsche, C. J.....New Ulm
Fritsche, T. R.....New Ulm
Gibbons, F. C.....Comfrey
Goblirsch, A. P.....Sleepy Eye

Hammermeister, T. F.....New Ulm
Hovde, Rolf.....Winthrop
Just, H. J.....Lafayette
Kusske, A. L.....New Ulm
Mortensbak, H. E.....Hanska
Nuessle, W. G.....Springfield
Pelant, F. J.....New Ulm
Peterson, R. A.....Vesta
Reineke, G. F.....New Ulm
*Rothenburg, J. C.....Springfield
Saffert, C. A.....New Ulm
Schroeppel, J. E.....Winthrop
Seifert, O. J.....New Ulm
Vogel, H. A. L.....New Ulm
Vogel, J. H.....New Ulm
Wahlberg, E. W.....Sleepy Eye
Weiser, G. B.....New Ulm
Wohlrabe, E. J.....Springfield

RENVILLE COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday of each month
Annual meeting, November
Number of Members: 22

President
Flinn, T. E.....Redwood Falls

Secretary
Billings, R. E.....Franklin

Adams, R. C.....Bird Island
Billings, R. E.....Franklin
Brand, W. A.....Redwood Falls
Bushard, W. J.....Bird Island
Ceplecha, S. F.....Redwood Falls
Cole, H. B.....Redwood Falls
Cole, J. G.....Redwood Falls
Cosgriff, J. A.....Olivia
Dordal, J.....Sacred Heart
Erickson, R. E.....Hector
Fawcett, A. M.....Renville
Flinn, T. E.....Redwood Falls
Gaines, E. C.....Buffalo Lake
Hartmann, C. M.....Fairfax
Johnson, O. H.....Redwood Falls
Johnson, W. E.....Morgan
Lenz, J. R.....Morton
Mesker, G. H.....Olivia
Passer, A. A.....Olivia
Penhall, F. W.....Morton
Potthoff, C. J.....Minneapolis
Preisinger, J. W.....Renville

RICE COUNTY MEDICAL SOCIETY

Regular meetings, at call
Annual meeting, December
Number of Members: 34

President
Plonske, C. J.....Faribault

Secretary
Lende, Norman.....Faribault

Babcock, F. M.....Northfield
Beede, Ethel R.....Faribault
Dugan, L. F.....Faribault
Dungay, N. S.....Northfield
Engberg, E. J.....Faribault
Francis, D. W.....Morristown
Haessly, S. B.....Faribault
Hanson, A. M.....Faribault
Huxley, F. R.....Faribault
Kanne, C. W.....Faribault
Lende, Norman.....Faribault
Lexa, F. J.....Lonsdale
Lyght, C. E.....Northfield
McKeon, J. O.....Montgomery
Meyer, F. C.....Kenyon
Meyer, P. F.....Faribault
Moses, Joseph, Jr.....Northfield
Moyer, R. E.....Faribault
Nuetzman, A. W.....Faribault
Plonske, C. J.....Faribault
Robilliard, C. M.....Faribault
Rohrer, C. A.....Waterville
Rumpf, C. W.....Faribault
Rumpf, W. H.....Faribault
Seeley, I. F.....Northfield
Stroebel, C. F.....Northfield
Thorson, O. P.....Northfield
Traeger, C. A.....Faribault
Warren, F. S.....Washington, D. C.
Weaver, P. H.....Faribault
West, E. J.....Faribault
Wilkowske, R. J.....Owatonna
Wilson, Warren.....Northfield
Wylie, A. R. T.....Faribault

ST. LOUIS COUNTY MEDICAL SOCIETY

Carlton, Cook, Itasca, Lake and St. Louis Counties
Regular meetings, second Thursday every month except July and August
Annual meeting, December
Number of Members: 234

President
Chapman, T. L.....Duluth

Secretary
MacRae, G. C.....Duluth

Abraham, A. L.....Duluth
Adams, B. S.....Hibbing
Addy, E. R.....Gilbert
Ahl, C. W.....Hibbing
Akins, W. M.....Eveleth
Anderson, H. R.....Deer River
Arko, J. L.....Hibbing
Armstrong, E. L.....Duluth
Athens, A. G.....Duluth
Ayres, G. T.....Ely
Bachnik, F. W.....Hibbing
Bagley, C. M.....Duluth
Bagley, Elizabeth C.....Duluth
Bagley, W. R.....Duluth
Bakkila, Henry.....Duluth
Bardon, Richard.....Duluth
Barney, L. A.....Duluth
Barrett, E. E.....Duluth
Becker, F. T.....Duluth
Bender, J. H.....Big Fork
Berdez, G. L.....Duluth
Bianco, A. J.....Duluth
Binet, H. E.....Grand Rapids
*Birkland, O. N.....Hibbing
Blacklock, S. S.....Hibbing
Blakely, C. C.....Barnum
Boman, P. G.....Duluth
Bowen, R. L.....Hibbing
Boyer, S. H., Jr.....Duluth
Boyer, S. H. Sr.....Duluth
Braverman, N. J.....Duluth
Bray, P. N.....Duluth
Bray, R. B.....Biwabik
Buckley, R. P.....Duluth
Burton, J. L.....Buhl
Butler, J. K.....Carlton
Cantwell, W. F.....International Falls
Carstens, C. F.....Hibbing
Chapman, T. L.....Duluth
Cheney, E. L.....Duluth
Chermak, F. G.....International Falls
Christensen, E. P.....Two Harbors
Clark, F. F.....Duluth
Clement, T. G.....Duluth
Collins, A. N.....Duluth
Collins, H. C.....Duluth
Coventry, W. A.....Duluth
Coventry, W. D.....Duluth
Dahlin, I. T.....Aurora
Davies, R. J.....Nopeming
Doolittle, L. E.....Duluth
Doyle, G. C.....Duluth
Eckman, P. F.....Duluth
Eckman, R. J.....Duluth
Ekblad, J. W.....Duluth
Elias, F. J.....Duluth
Elliott, W. S.....Virginia
Emanuel, K. W.....Duluth
Eppard, R. M.....Cloquet
Erskine, G. M.....Grand Rapids
Estrem, T. A.....Hibbing
Ewens, H. B.....Virginia
Fankboner, A. V.....Buhl
Fawcett, K. R.....Duluth
Fellows, M. F.....Duluth
Feuling, J. C.....Bovey
Fischer, M. McC.....Duluth
Fisketti, Henry.....Duluth
Forbes, R. S.....Duluth
Gendron, J. F.....Grand Rapids
Gillespie, M. G.....Duluth
Gillespie, N. H.....Duluth
Giroux, A. A.....Moose Lake
Goldish, D. R.....Duluth
Goodman, C. E.....Virginia
Gowan, L. R.....Duluth
Graham, Robert.....Duluth
Graves, W. N.....Duluth
Hall, A. E.....Virginia
Haney, C. L.....Duluth
Hanson, E. O.....Cloquet
Harlowe, H. D.....Virginia
Harris, C. N.....Hibbing
Hatch, W. E.....Duluth
Hathaway, S. J.....Proctor
Hayes, M. F.....Nashwauk
Hedberg, G. A.....Nopeming
Heiam, W. C.....Cook
*Heimark, O. E.....Duluth
Hilding, A. C.....Duluth
Hill, F. E.....Duluth
Hirschboeck, F. J.....Duluth
Hirschfield, M. S.....Duluth
Hoff, H. O.....Duluth
Hursh, M. M.....Hibbing
Hutchinson, Henry.....Moose Lake
Jacobson, Clarence.....Chisholm
Jensen, T. J.....Duluth
Johnson, K. E.....Duluth
Jolin, F. M.....Coleraine
Jolin, R. V.....Grand Rapids
Kemp, M. W.....Moose Lake
Kiesling, I. H.....Nashwauk
Klein, A. D.....Chisholm
Klein, Harry.....Duluth
Knapp, F. N.....Duluth
Kohlbry, C. O.....Duluth
Kotchevar, F. R.....Eveleth
Kozberg, Oscar.....Moose Lake
Kraft, Peter.....Duluth
Kuth, J. R.....Duluth
La Bree, R. H.....Chisholm
Laird, A. T.....Nopeming
Langmack, William.....Cloquet
Lenont, C. B.....Virginia
Lepak, F. J.....Duluth
Litman, S. N.....Duluth
Loofbourrow, E. H.....Keewatin
Macfarlane, P. H.....Chisholm
MacRae, G. C.....Duluth
Magney, F. H.....Duluth
Malmstrom, J. A.....Virginia
Manley, J. R.....Duluth
Marcley, W. J.....Nopeming
Martin, E. T.....Duluth
Martin, W. C.....Duluth
Mayne, R. M.....Duluth
McCarty, P. D.....Ely
McComb, C. F.....Duluth
McCoy, Mary K.....Duluth
McDaniel, S. P.....Virginia
McDonald, A. L.....Duluth
McHaffie, O. L.....Duluth

*Deceased.

McKenna, M. J.....Grand Rapids
McLeod, J. L.....Grand Rapids
McNutt, J. R.....Duluth
Mead, C. H.....Duluth
Merriman, L. L.....Duluth
Meyer, J. O.....Grand Rapids
Miners, G. A.....Deer River
Moe, R. J.....Duluth
Moe, Thomas.....Moose Lake
Mollers, T. P.....Mountain Iron
Monroe, P. B.....Two Harbors
Monserud, N. O.....Cloquet
More, C. W.....Eveleth
Morsman, L. W.....Hibbing
Mueller, R. F.....Two Harbors
Mueller, Selma C.....Duluth
Neff, W. S.....Virginia
Nelson, E. H.....Chisholm
Nelson, R. L.....Duluth
Nicholson, M. A.....Duluth
Nutting, R. E.....Duluth
O'Hanlon, J. A.....Proctor
Olson, A. E.....Duluth
Olson, A. O.....Duluth
Palmer, H. A.....Black Duck
Parker, O. W.....Ely
Parker, W. H.....Chisholm
Parson, E. I.....Askov
Pasek, A. W.....Cloquet
Pearsall, R. P.....Virginia
Pedersen, R. C.....Duluth
Pennie, D. F.....Duluth
Peterson, E. N.....Virginia
Peterson, J. H.....Duluth
Pfuetze, K. W.....Nopeming
Plowman, E. T.....Marble
Power, J. E.....Duluth
Puumala, R. H.....Cloquet
Raadquist, C. S.....Hibbing
Raihala, John.....Virginia
Raiter, F. W. S.....Cloquet
Raiter, R. F.....Cloquet
Robinson, J. M.....Duluth
Rokala, H. E.....Biwabik
Rood, D. C.....Duluth
Rosenfield, A. B.....Hibbing
Rowe, O. W.....Duluth
Rowles, E. K.....Coleraine
Rudie, P. S.....Duluth
Ryan, W. J.....Duluth
Sach-Rowitz, Alvan.....Moose Lake
Salter, R. A.....Virginia
Sarff, O. E.....Virginia
Sax, S. G.....Duluth
Scherer, C. A.....Duluth
Schroder, C. H.....Duluth
Schweiger, T. R.....Hibbing
Seashore, R. T.....Duluth
Shapiro, E. Z.....Duluth
Shastid, T. H.....Duluth
Shaw, A. W.....Virginia
Siegel, J. S.....Virginia
Sinamark, Andrew.....Hibbing
Sisler, C. E.....Grand Rapids
Slyfield, F. F.....Duluth
Smith, C. M.....Duluth
Smith, S. J.....Eveleth
Smith, W. R.....Grand Marais
Snyker, O. E.....Ely
Spang, A. J.....Duluth
Spicer, F. W.....Duluth
Spurbeck, R. G.....Cloquet
Strathern, M. L.....Gilbert
Stewart, D. E.....Grand Rapids
Strobel, W. G.....Duluth
Stuart, A. B.....Cloquet
Sukeforth, L. A.....Duluth
Sutherland, H. N.....Ely
Swanson, P. E.....Virginia
Swedberg, W. A.....Duluth
Swenson, A. O.....Duluth
Taylor, C. W.....Duluth
Terrell, B. J.....Nopeming
Tibbetts, M. H.....Duluth
Tilderquist, D. L.....Duluth
Tingdale, A. C.....Hibbing
Trytten, E. G.....Coleraine
Tuohy, E. L.....Duluth
Urberg, S. E.....Duluth
Van Valkenberg, J. D.....Floodwood
Vercellini, C. E.....Duluth
Walker, A. E.....Duluth
Wallace, M. O.....Duluth
Watson, C. G.....Soudan
Webber, E. E.....Duluth
Wellman, T. G.....Virginia
Wells, A. H.....Duluth
Welton, P. C.....Nopeming
Wheeler, D. W.....Duluth
Winter, J. A.....Duluth
Young, T. O.....Duluth
Young, V. A.....Duluth
Zlatovski, M. L.....Duluth

SCOTT-CARVER COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday of the month
Annual meeting, June
Number of Members: 34

President
Havel, H. W.....Jordan

Secretary
Pearson, B. F.....Shakopee

Bodaski, A. A.....Montgomery
Buck, F. H.....Shakopee
Cervenka, C. F.....New Prague
Crow, E. R.....Arlington
Eklund, E. J.....Norwood
Emmerson, W. S.....Mayer
*Fischer, H. P.....Shakopee
Garthe, J. J.....Shakopee
Havel, H. W.....Jordan
Hebeisen, M. B.....Chaska
Henriksen, H. G.....Northfield
Juergens, H. M.....Belle Plaine
Klein, J. C.....Shakopee
Kortsch, F. P.....Prior Lake
Kucera, S. T.....Lonsdale
Kurtin, H. J.....Lonsdale
Malerich, J. A.....Shakopee
Martin, T. P.....Arlington
Nagel, H. D.....Waconia
Novak, E. E.....New Prague
Olson, C. J.....Belle Plaine
Ormond, D. T.....Waconia
Pearson, B. F.....Shakopee
Phillips, W. H.....Jordan
Pogue, R. E.....Watertown
Reiter, H. W.....Shakopee
Schimelpfenig, G. T.....Chaska
Shrader, J. S.....Marietta
Simons, B. H.....Chaska
Westerman, A. E.....Montgomery
Westerman, F. C.....Montgomery
Wiechman, F. H.....Montgomery
Woodworth, L. F.....Le Center
Wunder, H. E.....Shakopee

SOUTHWESTERN MINNESOTA MEDICAL SOCIETY

Cottonwood, Jackson, Murray, Nobles, Pipestone and Rock Counties

Regular meetings, November and April
Annual meeting, October or November
Number of Members: 65

President
Stevenson, B. M.....Fulda

Secretary
DeBoer, Hermanus.....Edgerton

Arnold, E. W.....Adrian
Balmer, A. I.....Pipestone
Basinger, H. P.....Windom
Basinger, H. R.....Mountain Lake
Beckering, Gerrit.....Edgerton
Benjamin, W. G.....Pipestone
Bofenkamp, F. W.....Luverne
Bong, J. H.....Jasper
Brown, A. H.....Pipestone
Carlson, J. V.....Westbrook
Chadbourn, A. G.....Heron Lake
Chunn, S. S.....Pipestone
Clark, H. H.....Minneapolis
Cress, P. J.....Ellsworth
DeBoer, Hermanus.....Edgerton
Doman, V. W.....Lakefield
Doms, H. C. A.....Slayton
Dudley, J. H.....Windom
Engh, Sigfred.....Jackson
Halloran, W. H.....Jackson
Halpern, D. J.....Brewster
Harrison, P. W.....Worthington
Hebbel, Robert.....Windom
Hitchings, W. S.....Lakefield
Hoyer, L. J.....Windom
Johnson, R. E.....Worthington
Johnston, L. F.....Slayton
Kilbride, E. A.....Worthington
Kilbride, J. S.....Worthington
Larson, J. T.....Lake Wilson
Lohmann, J. G.....Jasper
Maitland, D. P.....Jackson
Maitland, E. T.....Jackson
*McCrea, J. M.....Fulda
McElmeel, E. F.....Pipestone
McLane, Evelyn A.....Jackson
Mork, B. O., Jr.....Worthington
Mork, B. O., Sr.....Worthington
Nealy, D. E.....Adrian
Pankratz, P. J.....Mountain Lake
Piper, W. A.....Mountain Lake
Rogers, C. W.....Heron Lake
Rose, J. T.....Lakefield
Schade, F. L.....Worthington
Schutz, E. S.....Mountain Lake
Schmidt, W. R.....Worthington
Sether, A. F.....Ruthton
Settlage, A. F. E.....Worthington
Sherman, C. L.....Luverne
Sjostrom, L. E.....Storden
Slater, S. A.....Worthington
Smith, G. G.....Fulda
Sogge, L. L.....Windom
Sorum, F. T.....Jasper
Stanley, C. R.....Worthington
Stevenson, B. M.....Fulda
Stratte, H. C.....Windom
Thorson, E. O.....Luverne
Tofte, Josephine.....Minneapolis
Waller, J. D.....Wilmont
Wells, W. B.....Jackson
Williams, C. A.....Pipestone
Williams, J. A.....Slayton
Williams, L. A.....Slayton
Wilson, I. H.....Worthington
Wright, C. O.....Luverne

STEARNS-BENTON COUNTY MEDICAL SOCIETY

Regular meetings, third Thursday of the month
Annual meeting, third Thursday of December
Number of Members: 50

President
Donaldson, C. S.....Foley

Secretary
Libert, J. N.....St. Cloud

Baumgartner, F. H.....Albany
Beuning, J. B.....St. Cloud
Brigham, C. F.....St. Cloud
Buscher, J. C.....St. Cloud
Clark, H. B.....St. Cloud
Donaldson, C. S.....Foley
DuBois, J. F.....Sauk Center
Engstrom, G. F.....Belgrade
Evans, L. M.....Sauk Rapids
Fleming, T. N.....St. Cloud

*Deceased.

Freeman, W. L.....St. Cloud
Friesleben, William.....Sauk Rapids
Gaida, J. B.....St. Cloud
Goehrs, H. W.....St. Cloud
Haberman, Emil.....Osakis
Halenback, P. L.....St. Cloud
Hemstead, Werner.....Brainerd
Henry, C. J.....Milaca
Holdridge, George.....Foley
Johnson, Walfred.....Sauk Center
Jones, R. N.....St. Cloud
Kern, M. J.....St. Cloud
Kettlewell, R. B.....Sauk Center
Kingsbury, E. M.....Clearwater
Kohler, D. W.....St. Joseph
Koop, S. H.....Richmond
Kuhlmann, August.....Melrose
Lewis, C. B.....St. Cloud
Libert, J. N.....St. Cloud
Mahowald, A.....Albany
McDowell, J. P.....St. Cloud
Meyer, A. A.....Melrose
Moos, D. J.....St. Cloud
Musachio, N. F.....Milaca
Myre, C. R.....Paynesville
Raetz, S. J.....Maple Lake
Rathbun, C. A.....St. Cloud
Richards, W. B.....St. Cloud
Rumpf, W. H.....St. Cloud
Sandven, N. O.....Paynesville
Schatz, F. J.....St. Cloud
Sherwood, G. E.....Kimball
•Stangl, Fred.....St. Cloud
Stangl, P. E.....St. Cloud
Stewart, N. E.....St. Cloud
Sutton, C. S.....St. Cloud
Townsend, De Wayne.....Brooten
Walfred, K. A.....St. Cloud
Watson, W. J.....Holdingford
Wenner, W. T.....St. Cloud
Zachman, A. H.....Melrose

STEELE COUNTY MEDICAL SOCIETY

Regular meetings, March, June, September, December
Annual meeting, January
Number of Members: 16

President
Roberts, O. W.....Owatonna

Secretary
McIntyre, J. A.....Owatonna

Berghs, L. V.....Owatonna
Carlson, V. W.....Blooming Prairie
Dewey, D. H.....Owatonna
Ertel, E. Q.....Ellendale
Hartung, E. H.....Claremont
Kreuzer, T. C.....Owatonna
McEnaney, C. T.....Owatonna
McIntyre, J. A.....Owatonna
Melby, Benedik.....Blooming Prairie
Morehead, D. E.....Owatonna
Nelson, E. J.....Owatonna
Roberts, O. W.....Owatonna
Schaefer, J. F.....Owatonna
Senn, E. W.....Owatonna
Stewart, A. B.....Owatonna
Stransky, T. W.....Owatonna

UPPER MISSISSIPPI MEDICAL SOCIETY

Aitkin, Beltrami, Cass, Clearwater, Crow Wing, Hubbard
Koochiching, Lake of the Woods, Morrison, Todd and Wadena Counties
Regular meetings, every third month
Annual meeting, January
Number of Members: 88

President
Nelson, N. P.....Brainerd

Secretary
Badeaux, G. I.....Brainerd

Adkins, G. H.....Pine River
Amundson, A. E.....Little Falls
Badeaux, G. I.....Brainerd
Beise, R. A.....Brainerd
Borgerson, A. H.....Sebeka
Bosland, H. G.....Verndale
Bray, K. E.....Park Rapids
Cardle, G. E.....Brainerd
Carlson, C. E.....Aitkin
Christie, G. R.....Long Prairie
Cook, J. M.....Staples
Coombs, C. H.....Cass Lake
Corrigan, J. E.....Waycross, Ga.
Davis, L. F.....Wadena
Davis, L. T.....Wadena
Davis, R. D.....Clearbrook
Davis, T. C.....Wadena
East, John.....Northome
Eiler, John.....Park Rapids
Ericson, M. G.....Long Prairie
Eyres, T. E.....Pequot
Fait, R. V.....Little Falls
Fitzsimons, W. E.....Brainerd
Frost, H. T.....Wadena
Garlock, A. V.....Bemidji
Garlock, D. H.....Bemidji
Gerber, M. P.....Brainerd
Ghostley, Mary C.....Puposky
Gifford, B. L.....Long Prairie
Gilmore, Rowland.....Bemidji
Grogan, J. S.....Wadena
Groschupf, T. P.....Bemidji
Grose, F. N.....Clarissa
Halliday, G. J.....Brainerd
Haller, William.....Bemidji
Hanover, R. D.....Littlefork
Hawkinson, J. P.....Crosby
Hiebert, H. L.....Ah-Gwah-Ching
Higgs, W. W.....Park Rapids
Holst, C. F.....Little Falls
Holst, J. B.....Little Falls
House, Z. E.....Cass Lake
Houston, D. M.....Park Rapids
Hubbard, O. E.....Brainerd
Hubin, E. G.....Deerwood
Jacobson, D. J.....Bemidji
Jamieson, E. F.....Brainerd
Johnson, C. E.....Pine River
Johnson, D. L.....Little Falls
Johnson, E. W.....Bemidji
•Kelly, B. W.....Aitkin
Kerlan, Irvin.....Washington, D. C.
Knights, J. A.....Bemidji
Lamb, H. L.....Little Falls
Larson, L. J.....Bagley
Lee, H. W.....Brainerd
Leemhuis, G. H.....McGregor
Lenarz, A. J.....Browerville
Marcum, E. H.....Bemidji
McCann, D. F.....Bemidji
Mitby, I. L.....Aitkin
Mosby, M. E.....Long Prairie
Mulligan, A. M.....Brainerd
Murray, R. A.....Aitkin
Nelson, N. P.....Brainerd
O'Leary, J. H.....Staples
Petraborg, H. T.....Aitkin
Pierce, C. H.....Wadena
Potek, David.....International Falls
Quanstrom, V. E.....Brainerd
Ratcliffe, J. J.....Aitkin
Ringle, O. F.....Walker
Roberts, L. M.....Little Falls
Simons, E. J.....Swanville
Simons, S. J.....Akeley
Smith, B. A.....Crosby
Stafford, C. E.....Hewitt
Stein, R. J.....Pierz
Swedenburg, P. A.....Swanville
Thabes, J. A., Jr.....Brainerd
Thabes, J. A., Sr.....Brainerd
Vandersluis, C. W.....Bemidji
Watson, A. M.....Royalton
Watson, P. T.....Cass Lake
Whittemore, D. D.....Bemidji
Will, C. B.....Bertha
Will, W. W.....Bertha
Wilson, V. O.....Minneapolis
Wingquist, C. G.....Crosby
Withrow, M. E.....International Falls

WABASHA COUNTY MEDICAL SOCIETY

Regular meetings, March, October
Annual meeting, first Thursday after first Monday in October
Number of Members: 14

President
Ellis, E. W.....Elgin

Secretary
Wilson, W. F.....Lake City

Bayley, E. C.....Lake City
Bouquet, B. J.....Wabasha
Cochrane, W. J.....Lake City
Collins, J. S.....Wabasha
Ellis, E. W.....Elgin
Flesche, B. A.....Lake City
Glabe, R. A.....Plainview
Hendrickson, R. R.....Wabasha
Holt, G. W.....Wabasha
Mahle, D. G.....Plainview
Ochsner, C. G.....Wabasha
Replogle, W. H.....Wabasha
Slocumb, J. A.....Plainview
Wilson, W. F.....Lake City

WASECA COUNTY MEDICAL SOCIETY

Regular meetings, none
Annual meeting, December
Number of Members: 9

President
Hottinger, R. C.....Janesville

Secretary
Olds, G. H.....Waseca

Bernstein, W. C.....New Richland
Gallagher, B. J.....Waseca
Hottinger, R. C.....Janesville
McIntire, H. M.....Waseca
Oeljen, S. C. G.....Waseca
Olds, G. H.....Waseca
Spittler, R. O.....New Richland
Swenson, O. J.....Waseca
Wadd, C. T.....Waseca

•Deceased.

WASHINGTON COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday in January, February, March, April, May, September, October November and December

Annual meeting second Tuesday in December

Number of Members: 18

President

Kalinoff, D. ..... Stillwater

Secretary

Boleyn, E. S. ..... Stillwater

Boleyn, E. S. ..... Stillwater
Brooks, G. F. ..... Stillwater
Gray, R. C. ..... Minneapolis
Haines, J. H. ..... Stillwater
Humphrey, W. R. ..... Stillwater
Johnson, R. G. ..... Stillwater
Josewski, R. J. ..... Stillwater
Kalinoff, D. ..... Stillwater
McCarten, F. M. ..... Stillwater
Mingo, F. E. ..... Hugo
Poirier, J. A. ..... Forest Lake
Ruggles, G. McC. ..... Forest Lake
Samson, E. R. ..... Stillwater
Sherman, C. H. ..... Bayport
Strand E. V. ..... Bayport
Street, Bernard ..... St. Cloud
Stuhr, J. W. ..... Stillwater
Wilkinson, Stella L. ..... Newport

WATONWAN COUNTY MEDICAL SOCIETY

Regular meeting, at call

Annual meeting, December

Number of Members: 8

President

Bregel, F. L. ..... St. James

Secretary

Grimes, H. B. ..... Madelia

Bergman, O. B. ..... St. James
Bratrude, E. J. ..... St. James
Bregel, F. L. ..... St. James
Grimes, H. B. ..... Madelia
Hagen, O. E. ..... Butterfield
Hammar, L. M. ..... Butterfield
McCarthy, W. J. ..... Madelia
Thompson, Albert ..... St. James

WEST CENTRAL MINNESOTA MEDICAL SOCIETY

Big Stone, Pope, Stevens, and Traverse Counties

Regular meetings, second Wednesday, March, May, October, December

Annual meeting October

Number of Members: 28

President

Elsey, E. M. ..... Glenwood

Secretary

Linde, Herman ..... Cyrus

Arneson, A. I. ..... Morris
Bates, B. V. ..... Browns Valley
Behmler, F. W. ..... Morris
Bergan, Otto ..... Clinton
Bolsta, Charles ..... Ortonville
Caine, C. E. ..... Morris
*Cumming, J. F. ..... Morris
Dahle, M. B. ..... Glenwood
Doleman, N. F. ..... Tintah
Eberlin, E. A. ..... Glenwood
Elsey, E. McC. ..... Glenwood
Elsey, J. R. ..... Glenwood
Engdahl, F. W. ..... Ortonville
Ewing, C. F. ..... Wheaton
Fitzgerald, E. T. ..... Morris
Garrow, D. M. ..... St. Paul
Giesen, A. F. ..... Starbuck
Karn, B. R. ..... Ortonville
Lindberg, A. L. ..... Wheaton
Linde, Herman ..... Cyrus
Magnuson, A. E. ..... Graceville
Merrill, Robert ..... Morris
McIver, B. A. ..... Lowry
Mooney, L. P. ..... Graceville
Muir, W. F. ..... Graceville
O'Donnell, D. M. ..... Ortonville
Oliver, C. I. ..... Graceville
Oliver, I. L. ..... Graceville
Ransom, M. L. ..... Hancock

WINONA COUNTY MEDICAL SOCIETY

Regular meetings, first Monday in January, April, July, October

Annual meeting, first Monday in January

Number of Members: 30

President

Heise, W. V. ..... Winona

Secretary

Tweedy, J. A. ..... Winona

Benoit, F. T. ..... Winona
Christensen, E. E. ..... Winona
Hamlon, J. S. ..... St. Charles
Heise, Herbert ..... Winona
Heise, W. F. C. ..... Winona
Heise, W. V. ..... Winona
Jacobs, L. G. ..... Winona
Keyes, J. D. ..... Winona
Lindsay, W. V. ..... Winona
Loomis, G. L. ..... Winona
Mattison, P. A. ..... Winona
McLaughlin, E. M. ..... Winona
Meinert, A. E. ..... Winona
Nauth, W. W. ..... Winona
Neumann, C. A. ..... Winona
*Nilles, L. J. ..... Rollingstone
Page, R. L. ..... St. Charles
Risser, E. D. ..... Winona
Robbins, C. P. ..... Winona
Roemer, H. J. ..... Winona
Roth, F. D. ..... Lewiston
Satterlee, H. W. ..... Lewiston
Schaefer, Samuel ..... Winona
Steiner, I. W. ..... Winona
Tweedy, G. J. ..... Winona
Tweedy, J. A. ..... Winona
Tweedy, R. B. ..... Winona
Walker, G. H. ..... Winona
Whetstone, S. D. ..... Winona
Wilson, R. H. ..... Winona
Younger, L. I. ..... Winona

WRIGHT COUNTY MEDICAL SOCIETY

Regular meetings, quarterly

Annual meeting, first Tuesday in October

Number of Members: 18

President

Thielen, R. D. ..... St. Michael

Secretary

Catlin, J. J. ..... Buffalo

Anderson, W. P. ..... Buffalo
Bendix, L. H. ..... Annandale
Catlin, J. J. ..... Buffalo
Catlin, T. J. ..... Buffalo
Ellison, F. E. ..... Monticello
Greenfield, W. T. ..... Delano
Grundset, O. J. ..... Montrose
Hansen, Rorbye ..... Monticello
Harriman, L. ..... Howard Lake
Hart, W. E. ..... Monticello
Lee, J. L. ..... Watertown
Peterson, O. L. ..... Cokato
Phillips, A. E. ..... Delano
Ridgway, A. M. ..... Annandale
Roholt, C. L. ..... Waverly
Rolig, D. H. ..... Howard Lake
*Rousseau, Victor ..... Maple Lake
Thielen, R. D. ..... St. Michael
Thompson, Arthur ..... Cokato

*Deceased

ALPHABETIC ROSTER

Aagaard, G. N., Jr.....Minneapolis
Aanes, A. M.....Red Wing
Aanes, A. R.....Ellsworth, Wis.
Abbott, C. B.....Springfield
Abbott, J. S.....St. Paul
Aborn, W. H.....Hawley
Abraham, A. L.....Duluth
Abramson, Milton.....Minneapolis
Adams, B. S.....Hibbing
Adams, J. M.....Minneapolis
Adams, R. C.....Bird Island
Adams, R. C.....Rochester
Addy, E. R.....Gilbert
Adkins, C. M.....Thief River Falls
Adson, A. W.....Rochester
Ahl, C. W.....Hibbing
Ahlis, J. J.....Caledonia
Ahrens, A. E.....St. Paul
Ahrens, A. H.....St. Paul
Aitkens, H. B.....Le Center
Akins, W. M.....Eveleth
Alberts, M. W.....St. Paul
Alden, J. F.....St. Paul
Alexander, F. H.....St. Paul
Alexander, H. A.....Minneapolis
Aling, C. A.....Minneapolis
Aling, C. P.....Minneapolis
Allen, A. W.....Austin
Allen, C. C.....Austin
Allen, E. V. N.....Rochester
Allen, H. W.....Minneapolis
Allen, H. B.....Austin
Allison, R. G.....Minneapolis
Altnow, H. O.....Minneapolis
Alvarez, W. C.....Rochester
Amberg, Samuel.....Rochester
Amundson, A. E.....Little Falls
Andersen, A. G.....Minneapolis
Andersen, S. C.....Minneapolis
Anderson, D. D.....Minneapolis
Anderson, E. D.....Minneapolis
Anderson, E. M.....Lamberton
Anderson, E. R.....Minneapolis
Anderson, F. J.....Minneapolis
Anderson, H. R.....Deer River
Anderson, J. K.....Minneapolis
Anderson, K. W.....Minneapolis
Anderson, M. J.....Rochester
Anderson, N. E.....Harmony
Anderson, P. A.....Minneapolis
Anderson, R. E.....Willmar
Anderson, S. H.....Red Wing
Anderson, U. S.....Minneapolis
Anderson, W. E.....Thief River Falls
Anderson, W. P.....Buffalo
Anderson, W. S.....Minneapolis
Andreassen, E. C.....Minneapolis
Andrews, R. N.....Mankato
Andrews, R. S.....Minneapolis
Annis, H. B.....Minneapolis
Arends, A. L.....Sandstone
Arey, S. L.....Excelsior
Arko, J. L.....Hibbing
Arlander, C. E.....Minneapolis
Arling, L. S.....Minneapolis
Armstrong, E. L.....Duluth
Armstrong, J. M.....St. Paul
Arndt, H. W.....Detroit Lakes
Arneson, A. I.....Morris
Arnold, Anna W.....Minneapolis
Arnold, D. C.....Minneapolis
Arnold, E. W.....Adrian
Arnquist, A. S.....St. Paul
Arnson, J. M.....Benson
Arny, F. P.....Preston
Arvidson, C. G.....Minneapolis
Athens, A. G.....Duluth
Aune, Martin.....Minneapolis
Aurand, W. H.....Minneapolis
Aurelius, J. R.....St. Paul
Ausman, C. F.....St. Paul
Autry, D. H.....Rochester
Ayres, G. T.....Ely

Babcock, F. M.....Northfield
Bachnik, F. W.....Hibbing
Bacon, D. K.....St. Paul
Bacon, L. C.....St. Paul
Bacon, R. S.....Montevideo
Badeaux, G. I.....Brainerd
Baggenstoss, A. H.....Rochester
Bagley, C. M.....Duluth
Bagley, Elizabeth C.....Duluth

*Deceased

Bagley, W. R.....Duluth
Bagwell, J. S., Jr.....Rochester
Bailey, A. L.....Rochester
Bailey, H. B.....Fairmont
Bair, H. L.....Rochester
Baken, M. P.....Minneapolis
Baker, A. B.....Minneapolis
Baker, A. C.....Fergus Falls
Baker, A. T.....Minneapolis
Baker, E. L.....Minneapolis
Baker, G. S.....Rochester
Baker, H. R.....Hayfield
Baker, Looe.....Minneapolis
Baker, N. H.....Fergus Falls
Baker, R. L.....Hayfield
Baker, Theodore, Jr.....Rochester
Bakkila, H. E.....Duluth
Balcome, M. M.....St. Paul
Balfour, D. C.....Rochester
Balkin, S. G.....Minneapolis
Balmer, A. I.....Pipestone
Barber, J. P.....Minneapolis
Bardon, Richard.....Duluth
Bargen, J. A.....Rochester
Barker, N. W.....Rochester
Barnes, A. R.....Rochester
Barney, L. A.....Duluth
Barr, L. C.....Albert Lea
Barr, W. H.....Wells
Barrett, E. E.....Duluth
Barrett, R. H.....Rochester
Barron, Moses.....Minneapolis
Barry, L. W.....St. Paul
Barsness, Nellie O. N.....St. Paul
Basinger, H. P.....Windom
Basinger, H. R.....Mountain Lake
Basom, W. C.....Rochester
Bass, G. W.....Minneapolis
Bates, B. V.....Browns Valley
Baumgartner, F. H.....Albany
Baxter, S. H.....Minneapolis
Bayard, H. F.....Minneapolis
Bayley, E. C.....Lake City
Beadie, W. D.....Cannon Falls
Beals, Hugh.....St. Paul
Beard, A. H.....Minneapolis
Becker, F. T.....Duluth
Beckering, Gerrit.....Edgerton
Beckjord, P. R.....Willmar
Beckman, W. G.....Minneapolis
Bedford, E. W.....Minneapolis
Beech, R. H.....St. Paul
Beede, Ethel R.....Faribault
Beek, H. O.....St. Paul
Behmler, F. W.....Morris
Behr, O. K.....Crookston
Beise, R. A.....Brainerd
Beizer, L. H.....Rochester
Bell, C. C.....St. Paul
Bell, E. T.....Minneapolis
Belote, G. B.....Caledonia
Belzer, M. S.....Minneapolis
Bender, J. H.....Big Fork
Bendix, L. H.....Annandale
Benedict, W. L.....Rochester
Benepe, J. L.....St. Paul
Benesh, N. G.....Minneapolis
Benham, E. W.....Mankato
Benjamin, A. E.....Minneapolis
Benjamin, E. G.....Minneapolis
Benjamin, H. G.....Minneapolis
Benjamin, W. G.....Pipestone
Benn, F. G.....Minneapolis
Bennett, R. L., Jr.....Rochester
Bennion, P. H.....St. Paul
Benoit, F. T.....Winona
Bentley, N. P.....St. Paul
Benton, P. C.....Gibbon
Berdez, G. L.....Duluth
Bergan, Otto.....Clinton
Berge, D. O.....Roseau
Bergen, C. T.....Blue Earth
Berger, A. G.....Minneapolis
Bergh, G. S.....Minneapolis
Bergh, L. N.....Montevideo
Berghs, L. V.....Owatonna
Bergman, O. B.....St. James
Bergquist, K. E.....Battle Lake
Berkman, D. M.....Rochester
Berkman, J. M.....Rochester
Berkwitz, N. J.....Minneapolis
Berlin, A. S.....Hallock
Berman, Reuben.....Minneapolis
Bernstein, W. C.....New Richland
Berrisford, P. D.....St. Paul
Bertelson, O. L.....Crookston

Bessesen, A. N., Jr.....Minneapolis
Bessesen, D. H.....Minneapolis
Bessesen, W. A.....Minneapolis
Beuning, J. B.....St. Cloud
Bianco, A. J.....Duluth
Bicek, J. F.....St. Paul
Bickel, W. H.....Rochester
Biedermann, Jacob..Thief River Falls
Bigelow, C. E.....Dodge Center
Billings, R. E.....Franklin
Binet, H. E.....Grand Rapids
Binger, H. E.....St. Paul
Binger, M. W.....Rochester
Birge, R. F.....Rochester
*Birkland, O. N.....Hibbing
Birnberg, T. L.....St. Paul
Black, B. M.....Rochester
Black, J. R.....Rochester
Black, William.....Mankato
Blacklock, S. S.....Hibbing
Blake, James.....Hopkins
Blake, James A.....Hopkins
Blakely, C. C.....Barnum
Blakey, A. R.....Osakis
Blanchard, H. G.....Fairmont
Blaustone, H. H.....Minneapolis
Blegen, H. M.....Warren
Blomberg, W. R.....Princeton
Blumenthal, J. S.....Minneapolis
Blumstein, Alex.....Minneapolis
Boardman, D. V.....Twin Valley
Bock, R. A.....St. Paul
Bockman, M. W. H.....Minneapolis
Bodaski, A. A.....Montgomery
Boeckmann, Egil.....St. Paul
Boehme, E. J.....Minneapolis
Boehrer, J. J.....Minneapolis
Bofenkamp, F. W.....Luverne
Bohl, G. W.....Ada
*Bohland, E. H.....St. Paul
Boies, L. R.....Minneapolis
Bolender, H. L.....St. Paul
Boleyn, E. S.....Stillwater
Boline, C. A.....Battle Lake
Bolsta, Charles.....Ortonville
Boman, P. G.....Duluth
Bong, J. H.....Jasper
Boody, G. J., Jr.....Dawson
Booth, A. E.....Minneapolis
Boothby, W. M.....Rochester
Boreen, C. A.....Minneapolis
Borg, J. F.....St. Paul
Borgerson, A. H.....Sebeka
Borgeson, E. J.....Minneapolis
Borman, C. N.....Minneapolis
Borreson, Baldwin...Thief River Falls
Bosland, H. G.....Verndale
Bossert, C. S.....Mora
Bossingham, O. N.....Lake Benton
Bottolfson, B. T.....Moorhead
Bouma, L. R.....St. Paul
Bouman, H. A. H.....Minneapolis
Bouquet, B. J.....Wabasha
Bowen, R. L.....Hibbing
Bowing, H. H.....Rochester
Boyd, L. M.....Alexander
Boyer, S. H.....Duluth
Boyer, S. H., Jr.....Duluth
Boynton, Ruth E.....Minneapolis
Boysen, Herbert.....Welcome
Boysen, J. E.....Pelican Rapids
Boysen, Peter.....Pelican Rapids
Braasch, W. F.....Rochester
Brand, G. D.....St. Paul
Brand, W. A.....Redwood Falls
Branton, A. F.....Willmar
Branton, B. J.....Willmar
Bratrud, A. F.....Minneapolis
Bratrud, Edward....Thief River Falls
Bratrude, E. J.....St. James
Braverman, N. J.....Duluth
Bray, E. R.....St. Paul
Bray, K. E.....Park Rapids
Bray, P. N.....Duluth
Bray, R. B.....Biwabik
Bregel, F. L.....St. James
Brekke, H. J.....Minneapolis
Brey, F. W.....Wabasso
Briggs, J. F.....St. Paul
Brigham, C. F.....St. Cloud
Brigham, F. T.....Watkins
Brink, A. A.....Baudette
Brink, D. M.....Isle
Broadie, T. E.....St. Paul
Broders, A. C.....Rochester
Brodie, W. D.....St. Paul

Broker, W. S. ..... Wadena
Brooks, C. N. ..... Minneapolis
Brooks, G. F. ..... Stillwater
Brown, A. E. ..... Rochester
Brown, A. H. ..... Pipestone
Brown, E. D. ..... Paynesville
Brown, F. I. ..... St. Paul
Brown, G. E., Jr. ..... Rochester
Brown, H. A. ..... Rochester
Brown, H. O. ..... Rochester
Brown, J. C. ..... St. Paul
Brown, J. R. ..... Rochester
Brown, L. I. ..... Crookston
Brown, P. W. ..... Rochester
Browne, H. C., Jr. ..... Rochester
Brownstone, Manuel ..... Sandstone
Brumm, H. J. ..... Rochester
Brunsting, L. A. ..... Rochester
Brusegard, J. F. ..... Red Wing
Brutsch, G. C. ..... Minneapolis
Bryant, F. L. ..... Minneapolis
Buchstein, H. F. ..... Minneapolis
Buck, F. H. ..... Shakopee
Buckley, R. P. ..... Duluth
Buie, L. A. ..... Rochester
Bulinski, T. J. ..... St. Paul
Bulkley, Kenneth ..... Minneapolis
Bunker, B. W. ..... Anoka
Burch, E. P. ..... St. Paul
Burch, F. E. ..... St. Paul
Burchell, H. B. ..... Rochester
Burnap, W. L. ..... Fergus Falls
Burns, F. M. ..... Milan
Burns, H. D. ..... Albert Lea
Burns, M. A. ..... Milan
Burns, R. M. ..... St. Paul
Burton, C. G. ..... St. Paul
Burton, J. L. ..... Buhl
Buscher, J. C. ..... St. Cloud
Bushard, W. J. ..... Bird Island
Busher, H. H. ..... St. Paul
Butler, John ..... Minneapolis
Butler, J. K. ..... Carlton
Butt, H. R. ..... Rochester
Butturff, C. R. ..... Freeborn
Butzer, J. A. ..... Mankato
Buzzelle, L. K. ..... Minneapolis

Cabell, C. L. ..... Rochester
Cable, M. L. ..... Minneapolis
Cabot, V. S. ..... Minneapolis
Cady, L. H. ..... Minneapolis
Cain, C. L. ..... St. Paul
Caine, C. E. ..... Morris
Cairns, R. J. ..... Sanborn
Caldwell, J. P. ..... St. Paul
Calhoun, F. W. ..... Albert Lea
Callahan, F. F. ..... Pokegama
Callerstrom, G. W. ..... Minneapolis
Cameron, D. M. ..... Rochester
Cameron, Isabell L. ..... Minneapolis
Camp, J. D. ..... Rochester
Camp, W. E. ..... Minneapolis
Campbell, D. C. ..... Rochester
Campbell, L. M. ..... Minneapolis
Campbell, O. J. ..... Minneapolis
Canfield, W. W. ..... Houston
Cantwell, W. F. ..... International Falls
Cardle, A. E. ..... Minneapolis
Cardle, G. E. ..... Brainerd
Carey, J. B. ..... Minneapolis
Carlson, C. E. ..... Aitkin
Carlson, J. V. ..... Westbrook
Carlson, Lawrence ..... Minneapolis
Carlson, L. T. ..... Minneapolis
Carlson, V. W. ..... Blooming Prairie
Carman, J. E. ..... Detroit Lakes
Caron, R. P. ..... Minneapolis
Carroll, W. C. ..... St. Paul
Carstens, C. F. ..... Hibbing
Caspers, C. G. ..... Minneapolis
Catlin, J. J. ..... Buffalo
Catlin, T. J. ..... Buffalo
Cavanor, F. T. ..... Minneapolis
Ceplecha, S. F. ..... Redwood Falls
Cervenka, C. F. ..... New Prague
Challman, S. A. ..... Minneapolis
Chadbourn, A. G. ..... Heron Lake
Chambers, W. C. ..... Blue Earth
Chapman, A. S. ..... Rochester
Chapman, T. L. ..... Duluth
Chatterton, C. C. ..... St. Paul
Chauncey, L. R. ..... Rochester
Cheney, E. L. ..... Duluth
Chermak, F. G. ..... International Falls

Cherry, J. H. ..... Rochester
Chesley, A. J. ..... St. Paul
Christensen, E. E. ..... Winona
Christensen, E. P. ..... Two Harbors
Christenson, G. R. ..... Minneapolis
Christiansen, Andrew ..... St. Paul
Christianson, H. W. ..... Minneapolis
Christie, G. R. ..... Long Prairie
Christison, J. T. ..... St. Paul
Chunn, S. S. ..... Pipestone
Clagett, O. T. ..... Rochester
Clark, F. F. ..... Duluth
Clark, H. B. ..... St. Cloud
Clark, H. B., Jr. ..... St. Paul
Clark, H. H. ..... Minneapolis
Clark, H. S. ..... Minneapolis
Clark, L. W. ..... Spring Valley
Clark, T. C. ..... Minneapolis
Clay, L. B. ..... Minneapolis
Claydon, D. R. ..... Red Wing
Claydon, H. F. ..... Zumbrota
Claydon, L. E. ..... Red Wing
Clegg, R. S. ..... Rochester
Clement, J. B. ..... Lester Prairie
Clement, T. G. ..... Duluth
Cleveland, W. H. ..... Rochester
Clifford, G. W. ..... Alexandria
Clifton, T. A. ..... Chatfield
Cochrane, B. B. ..... St. Paul
Cochrane, W. J. ..... Lake City
Cohen, B. A. ..... Minneapolis
Cohen, S. S. ..... Oak Terrace
Colby, W. L. ..... St. Paul
Cole, H. B. ..... Redwood Falls
Cole, J. G. ..... Redwood Falls
Cole, W. H. ..... St. Paul
Collie, H. G. ..... St. Paul
Collins, A. N. ..... Duluth
Collins, H. C. ..... Duluth
Collins, J. S. ..... Wabasha
Colvin, A. R. ..... St. Paul
Colyer, G. E. ..... Rochester
Combacker, L. C. ..... Fergus Falls
Comfort, M. W. ..... Rochester
Condit, W. H. ..... Minneapolis
Condon, W. B. ..... Rochester
Conner, H. M. ..... Rochester
Connor, C. E. ..... St. Paul
Conway, J. F. ..... Rochester
Cook, C. K. ..... St. Paul
Cook, E. N. ..... Rochester
Cook, H. W. ..... Minneapolis
Cook, J. M. ..... Staples
Coombs, C. H. ..... Cass Lake
Cooney, H. C. ..... Princeton
Cooper, C. C. ..... St. Paul
Cooper, M. D. ..... Winnebago
Cooperman, H. O. ..... Minneapolis
Corbett, J. F. ..... Minneapolis
Corniea, A. D. ..... Minneapolis
Corrigan, J. E. ..... Waycross, Ga.
Cosgriff, J. A. ..... Olivia
Cottam, G. G. ..... Minneapolis
Counseller, V. S. ..... Rochester
Countryman, R. S. ..... St. Paul
Covell, W. W. ..... St. Peter
Coventry, M. B. ..... Rochester
Coventry, W. A. ..... Duluth
Coventry, W. D. ..... Duluth
Cowern, E. W. ..... North St. Paul
Cragg, R. W. ..... Rochester
Craig, W. McK. ..... Rochester
Cranmer, R. R. ..... Minneapolis
Cranston, R. W. ..... Minneapolis
Creevy, C. D. ..... Minneapolis
Creighton, R. H. ..... Minneapolis
Crenshaw, J. L. ..... Rochester
*Cress, E. E. ..... Boyd
Cress, P. J. ..... Ellsworth
Crewe, J. E. ..... Rochester
Critchfield, L. R. ..... St. Paul
Cronwell, B. J. ..... Austin
Crow, E. R. ..... Arlington
Crumpacker, L. K. ..... Rochester
Culligan, J. M. ..... St. Paul
*Cumming, J. F. ..... Morris
Cunningham, B. P. ..... Rochester
Curtin, J. F. ..... Minneapolis
Curtis, R. A. ..... Le Center
Cusick, P. L. ..... Rochester
Cutts, George ..... Minneapolis

Dack, L. G. ..... St. Paul
Dady, E. E. ..... Minneapolis
Dahl, E. O. ..... Minneapolis
Dahl, G. A. ..... Mankato

Dahl, I. A. ..... Minneapolis
Dahle, M. B. ..... Glenwood
Dahlin, I. T. ..... Aurora
Daignault, Oscar ..... Benson
Daniel, D. H. ..... Minneapolis
Daniel, L. M. ..... Minneapolis
Danielson, K. A. ..... Litchfield
Danielson, Lennox ..... Litchfield
Darling, J. P. ..... Rochester
Dart, L. O. ..... Minneapolis
Daugherty, E. B. ..... Marine-on-St. Croix
Daugherty, L. E. ..... St. Paul
Davies, R. J. ..... Nopeming
Davis, A. C. ..... Rochester
Davis, Herbert ..... St. Paul
Davis, I. G. ..... Rushford
Davis, J. C. ..... Minneapolis
Davis, L. F. ..... Wadena
Davis, L. T. ..... Wadena
Davis, R. D. ..... Clearbrook
Davis, T. C. ..... Wadena
Davis, William ..... St. Paul
Day, Lois A. ..... Rochester
Dearing, W. H., Jr. ..... Rochester
De Boer, Hermanus ..... Edgerton
DeCourcey, D. M. ..... St. Paul
Dedolph, Karl ..... St. Paul
Dedolph, T. H. ..... Braham
Delavan, P. A. ..... St. Paul
Delmonico, E. J. ..... Rochester
Delmore, J. L., Jr. ..... Roseau
Delmore, J. L. ..... Roseau
del Plaine, C. W. ..... Minneapolis
Demo, P. W. ..... Wells
Denman, A. V. ..... Mankato
Derauf, B. I. ..... St. Paul
Derbyshire, R. C. ..... Rochester
Desjardins, A. U. ..... Rochester
Devereaux, T. J. ..... Wayzata
Dewey, D. H. ..... Owatonna
Dickson, T. H. ..... St. Paul
Diehl, H. S. ..... Minneapolis
Diessner, H. D. ..... Minneapolis
Dittman, G. C. ..... St. Paul
Dix, C. R. ..... Rochester
Dixon, C. F. ..... Rochester
Dockerty, M. B. ..... Rochester
Doehring, P. C., Jr. ..... Rochester
Doering, R. E. ..... Minneapolis
Dolder, F. C. ..... Eyota
Doleman, N. F. ..... Tintah
Doman, V. W. ..... Lakefield
Doms, H. C. A. ..... Slayton
Donald, C. J., Jr. ..... Rochester
Donaldson, C. S. ..... Foley
Donohue, P. F. ..... St. Paul
Donovan, D. L. ..... Albert Lea
Doolittle, L. E. ..... Duluth
Dordal, John ..... Sacred Heart
Dorge, R. I. ..... Minneapolis
Dornblaser, H. B. ..... Minneapolis
Dorsey, G. C. ..... Minneapolis
Dorton, H. E. ..... Rochester
Doss, A. K. ..... Rochester
Dovre, C. M. ..... St. Paul
Dowswell, W. J. ..... Kerkhoven
Doxey, G. L. ..... Minneapolis
Doyle, G. C. ..... Duluth
Doyle, L. O. ..... Minneapolis
Drake, C. B. ..... St. Paul
Drake, C. R. ..... Minneapolis
Drake, F. A. ..... Lanesboro
Dredge, H. P. ..... Sandstone
Drill, H. E. ..... Hopkins
Drips, Della G. ..... Rochester
Drought, W. W. ..... Fergus Falls
Dry, T. J. ..... Rochester
Dubbe, F. H. ..... New Ulm
Dublin, William ..... Rochester
Du Bois, J. F. ..... Sauk Centre
Dudley, J. H. ..... Windom
Duff, E. R. ..... Minneapolis
Dugan, L. F. ..... Faribault
Dukelow, D. A. ..... Minneapolis
Dumas, A. G. ..... Minneapolis
Duncan, J. W. ..... Moorhead
Dungay, N. S. ..... Northfield
Dunlap, E. H. ..... Minneapolis
Dunn, G. R. ..... Minneapolis
Dunn, J. N. ..... St. Paul
Duryea, W. M. ..... Minneapolis
Dutton, C. E. ..... Minneapolis
Dvorak, B. A. ..... Minneapolis
Dwan, P. F. ..... Minneapolis
Dworsky, S. D. ..... Minneapolis
Dysterheft, A. F. ..... Gaylord

*Deceased

Earl, George ..... St. Paul
Earl, J. R. ..... St. Paul
Earl, Robert ..... St. Paul
East, John ..... Northome
Eaton, L. M. ..... Rochester
Eberlin, E. A. ..... Glenwood
Eckhardt, C. L. ..... Austin
Eckman, P. F. ..... Duluth
Eckman, R. J. ..... Duluth
Ederer, J. J. ..... Mahnomen
Edlund, Gustaf ..... St. Paul
Edwards, J. W. ..... St. Paul
Edwards, R. T. ..... Elysian
Edwards, T. J. ..... St. Paul
Eginton, C. T. ..... Rochester
Ehrenberg, C. J. ..... Minneapolis
Ehrlich, S. P. ..... Minneapolis
Eich, Matthew ..... Minneapolis
Eiler, John ..... Park Rapids
Eisenstadt, D. H. ..... Minneapolis
Eitel, G. D. ..... Minneapolis
Ekblad, J. W. ..... Duluth
Eklund, E. J. ..... Norwood
Elias, F. J. ..... Duluth
Elkins, E. C. ..... Rochester
Ellingson, A. R. ..... Detroit Lakes
Elliott, W. S. ..... Virginia
Ellis, E. W. ..... Elgin
Ellison, D. E. ..... Minneapolis
Ellison, F. E. ..... Monticello
Elsey, E. M. ..... Glenwood
Elsey, J. R. ..... Glenwood
Ely, O. S. ..... So. St. Paul
Emanuel, K. W. ..... Duluth
Emerson, E. C. ..... St. Paul
Emmerson, W. S. ..... Mayer
Emmett, J. L. ..... Rochester
Endress, E. K. ..... St. Paul
Engberg, E. J. ..... Faribault
Engdahl, F. W. ..... Ortonville
Engh, Sigfred ..... Jackson
Englehart, P. C. ..... Minneapolis
English, J. P. ..... Rochester
Engle, D. E. ..... Rochester
Engstrand, O. J. ..... Minneapolis
Engstrom, G. F. ..... Belgrade
Eppard, R. M. ..... Cloquet
Erdmann, C. A. ..... Minneapolis
Erich, J. B. ..... Rochester
Erickson, A. O. ..... Ivanhoe
Erickson, Eskil ..... Halstad
Erickson, R. E. ..... Hector
Erickson, R. F. ..... Minneapolis
Ericson, R. M. ..... Minneapolis
Ericson, Swan, ... Le Sueur
Ericsson, M. G. ..... Long Prairie
Ernest, G. C. H. ..... So. St. Paul
Erskine, G. M. ..... Grand Rapids
Ertel, E. O. ..... Ellendale
Eshelby, E. C. ..... St. Paul
Esser, John ..... Perham
Esser, O. J. ..... Gibbon
Estrem, C. O. ..... Fergus Falls
Estrem, T. A. ..... Hibbing
Eusterman, G. B. ..... Rochester
Evans, E. T. ..... Minneapolis
Evans, L. M. ..... Sauk Rapids
Evans, R. D. ..... Minneapolis
Evarts, A. B. ..... Rochester
Ewens, H. B. ..... Virginia
Ewing, C. F. ..... Wheaton
Eyres, T. E. ..... Pequot

Faber, J. E. ..... Rochester
Fahey, E. W. ..... St. Paul
Fahr, G. E. ..... Minneanolis
Fait, R. V. ..... Little Falls
Fankboner, A. V. ..... Buhl
Fansler, W. A. ..... Minneapolis
Farrish, R. C. ..... Sherburn
Fawcett, A. M. ..... Renville
*Fawcett, C. E. ..... Stewartville
Fawcett, K. R. ..... Duluth
Feeney, J. M. ..... Minneapolis
Feinstein, J. Y. ..... Cambridge
Feldman, F. M. ..... Rochester
Fellows, M. F. ..... Duluth
Fenger, E. P. K. ..... Oak Terrace
Ferguson, J. C. ..... St. Paul
Ferris, D. O. ..... Rochester
Fesenmaier, O. B. ..... New Ulm
Fesler, H. H. ..... St. Paul
Fetterly, Warren ..... Minneapolis
Feuling, J. C. ..... Bovey
Fiel, C. A., Jr. ..... Rochester
Figi, F. A. ..... Rochester
Fine, B. A. ..... Winsted
Fink, L. W. ..... Minneapolis
Fink, W. H. ..... Minneapolis

*Deceased

*Fischer, H. P. ..... Shakopee
Fischer, M. McC. ..... Duluth
Fishback, C. F. ..... Rochester
Fisher, H. C. ..... Rochester
Fisher, I. I. ..... Ceylon
Fisher, J. M. ..... Fergus Falls
Fisketti, Henry ..... Duluth
Fitzgerald, D. F. ..... Minneapolis
Fitzgerald, E. T. ..... Morris
Fitzsimons, W. E. ..... Brainerd
Fjeldstad, C. A. ..... Minneapolis
Flanagan, H. F. ..... St. Paul
Flanagan, L. G. ..... Austin
Flancher, L. H. ..... Lake Park
Fleming, A. S. ..... Minneapolis
Fleming, T. N. ..... St. Cloud
Flesche, B. A. ..... Lake City
Flinn, T. E. ..... Redwood Falls
Flom, M. G. ..... Zumbrota
Fogarty, C. W. ..... St. Paul
Fogelberg, E. J. ..... St. Paul
Foley, F. E. B. ..... St. Paul
Folken, F. G. ..... Albert Lea
Forbes, R. S. ..... Duluth
Ford, B. C. ..... Marshall
Ford, W. H. ..... Minneapolis
Foshager, H. T. ..... Clara City
Foster, W. K. ..... Minneapolis
Fowler, L. H. ..... Minneapolis
Franchere, F. W. ..... Lake Crystal
Francis, D. W. ..... Morristown
Frank, J. E. ..... Marshall
Fredericks, G. M. ..... Minneapolis
Frederickson, Alice C. ..... Willmar
Frederickson, G. U. Y. ..... Willmar
Fredlund, M. L. ..... Milaca
Freeman, C. D. ..... St. Paul
Freeman, G. H. ..... St. Peter
Freeman, J. P. ..... Albert Lea
Freeman, W. L. ..... St. Cloud
Freeman, W. N. ..... Perham
Friedman, L. L. ..... St. Paul
Freligh, W. P. ..... Albert Lea
Fricke, R. E. ..... Rochester
Friedell, Aaron ..... Minneapolis
Friedell, George ..... Russell
Friedell, M. T. ..... Rochester
Friesleben, William ..... Sauk Rapids
Frisch, F. P. ..... Willmar
Fritsche, Albert ..... New Ulm
Fritsche, C. J. ..... New Ulm
Fritsche, T. R. ..... New Ulm
Fritz, W. L. ..... St. Paul
Fritzell, K. E. ..... Minneapolis
Froats, C. W. ..... St. Paul
Frost, E. H. ..... Willmar
Frost, H. T. ..... Wadena
Frost, J. B. ..... Minneapolis
Fugina, G. R. ..... Mankato
Fuller, Alice H. ..... Minneapolis
Funk, V. K. ..... Oak Terrace
Furst, J. N. ..... Hallock

Gaarde, F. W. ..... Rochester
Gager, E. C. ..... St. Paul
Gaida, J. B. ..... St. Cloud
Gaines, E. C. ..... Buffalo Lake
Gallagher, B. J. ..... Waseca
Gamble, J. W. ..... Albert Lea
Gamble, P. M. ..... Albert Lea
Gammell, J. H. ..... Minneapolis
Garbrecht, A. W. ..... St. Paul
Gardiner, D. G. ..... St. Paul
Gardner, E. L. ..... Minneapolis
Gardner, J. W. ..... Rochester
Gardner, V. H. ..... Fairmont
Gardner, W. P. ..... Anoka
Garlock, A. V. ..... Bemidji
Garlock, D. H. ..... Bemidji
Garrow, D. M. ..... St. Paul
Garten, J. L. ..... Minneapolis
Garthe, J. J. ..... Shakopee
Geer, E. K. ..... St. Paul
Gehlen, J. N. ..... St. Paul
Geist, G. A. ..... St. Paul
Gendron, J. F. X. ..... Grand Rapids
Gerber, M. P. ..... Brainerd
Germo, Charles ..... Balaton
Ghent, C. H. ..... St. Paul
Ghormley, R. K. ..... Rochester
Ghostley, Mary C. ..... Puposky
Gibbons, F. C. ..... Comfrey
Gibbs, E. C. ..... St. Paul
Giere, E. O. ..... Minneapolis
Giere, J. C. ..... Minneapolis
Giere, R. W. ..... Minneapolis
Giere, S. W. ..... Benson
Giesen, A. F. ..... Starbuck
Giessler, P. W. ..... Minneapolis
Giffin, H. M. ..... Rochester
Giffin, H. Z. ..... Rochester

Giffin, L. A. ..... Rochester
Gifford, B. L. ..... Long Prairie
Gilbert, M. G. ..... Minneapolis
Gilfillan, J. S. ..... St. Paul
Gilkey, S. E. ..... St. Paul
Gilles, F. L. ..... Minneapolis
Gillespie, M. G. ..... Duluth
Gillespie, N. H. ..... Duluth
Gilmore, Rowland ..... Bemidji
Gingold, B. A. ..... Minneapolis
Ginsberg, William ..... St. Paul
Giroux, A. A. ..... Moose Lake
Girvin, R. B. ..... Minneapolis
Glabe, R. A. ..... Plainview
Goblirsch, A. P. ..... Sleepy Eye
Goehrs, H. W. ..... St. Cloud
Golberg, M. L. ..... Minneapolis
Goldberg, I. M. ..... Minneapolis
Goldish, D. R. ..... Duluth
Goldman, T. I. ..... Minneapolis
Goltz, E. V. ..... St. Paul
Good, C. A., Jr. ..... Rochester
Good, H. D. ..... Minneapolis
Goodman, C. E. ..... Virginia
Goodson, W. H., Jr. ..... Rochester
Gordon, P. E. ..... Minneapolis
Gore, H. R. ..... Rochester
Goss, H. C. ..... Glencoe
Gosslee, G. L. ..... Moorhead
Gowan, L. R. ..... Duluth
Graham, Robert ..... Duluth
Graham, R. W. ..... Rochester
Grandy, A. Margaret ..... Rochester
Grant, H. W. ..... St. Paul
Gratzek, F. R. ..... Minneapolis
Gratzek, Thomas ..... St. Paul
Grau, R. K. ..... St. Paul
Grave, Floyd ..... Minneapolis
Graves, R. B. ..... Red Wing
Graves, W. N. ..... Duluth
Gray, F. D. ..... Marshall
Gray, H. K. ..... Rochester
Gray, R. C. ..... Minneapolis
Greene, L. F. ..... Rochester
Greenfield, W. T. ..... Delano
Gregg, R. O. ..... Rochester
Griffin, P. J. ..... Fertile
Grimes, B. P. ..... St. Peter
Grimes, H. B. ..... Madelia
Grimes, Marian ..... Minneapolis
Grindlay, J. H. ..... Rochester
Grise, W. B. ..... Austin
Griswold, F. E. ..... Hoffman
Groff, J. E. ..... Rochester
Grogan, J. S. ..... Wadena
Gronvall, P. R. ..... Minneapolis
Groschupf, T. P. E. ..... Bemidji
Grose, F. N. ..... Clarissa
Gruenhagen, A. P. ..... St. Paul
Grundset, O. J. ..... Montrose
Gullixson, Andrew ..... Albert Lea
Gully, R. J. ..... Cambridge
Gunderson, N. A. ..... Minneapolis
Gunderson, R. M. ..... Lake Park
Gunlaugson, F. G. ..... Mankato
Gushurst, E. G. ..... Minneapolis
Gustason, H. T. ..... Minneapolis

Habein, H. C. ..... Rochester
Haberman, Emil ..... Osakis
Hacking, F. H. ..... Minneapolis
Haessly, S. B. ..... Faribault
Hagaman, G. K. ..... St. Paul
Hagen, O. E. ..... Butterfield
Hagen, O. J. ..... Moorhead
Haggard, G. D. ..... Minneapolis
Haight, G. G. ..... Audubon
Haines, J. H. ..... Stillwater
Haines, S. F. ..... Rochester
Haisten, A. S. ..... Rochester
Halenbeck, P. L. ..... St. Cloud
Hall, A. E. ..... Virginia
Hall, A. R. ..... St. Paul
Hall, B. E. ..... Rochester
Hall, H. H. ..... St. Paul
Hall, J. M. ..... Minneapolis
Halladay, G. J. ..... Brainerd
Hallberg, C. A. ..... Minneapolis
Hallenbeck, D. F. ..... Rochester
Haller, W. M. ..... Bemidji
Hallock, Philip ..... Minneapolis
Halloran, W. H. ..... Jackson
Halpern, D. J. ..... Brewster
Halpin, J. E. ..... Rush City
Hamel, A. L. ..... Minneapolis
Hamilton, A. S. ..... Minneapolis
Hamlin, G. B. ..... Minneapolis
Hamlon, J. S. ..... St. Charles
Hammar, L. M. ..... Butterfield
Hammer, H. J. ..... Rochester
Hammermeister, T. F. ..... New Ulm

Hammerstad, L. M.....Minneapolis
Hammes, E. M.....St. Paul
Hammond, A. J. H.....Minneapolis
Hammond, J. F.....St. Paul
*Hand, W. R.....Elbow Lake
Haney, C. L.....Duluth
Hankerson, R. G.....Minnesota Lake
Hannah, H. B.....Minneapolis
Hanover, R. D.....Littlefork
Hansen, C. O.....Minneapolis
Hansen, E. W.....Minneapolis
Hansen, Olga S.....Minneapolis
Hansen, Rorbye .....Monticello
Hanson, A. M.....Faribault
*Hanson, E. C.....Austin
Hanson, E. O.....Cloquet
Hanson, E. C.....New York Mills
Hanson, H. B. .....St. Paul
Hanson, H. J.....Minneapolis
Hanson, H. V.....Minneapolis
Hanson, M. B.....Minneapolis
Hanson, W. A. H.....Minneapolis
Happe, L. J.....Minneapolis
Hargis, W. H., Jr.....Rochester
Hargraves, M. M.....Rochester
Harley, R. D.....Rochester
Harlow, H. D. .....Virginia
Harmon, G. E.....St. Paul
Harper, S. B.....Rochester
Harriman, Leonard.....Howard Lake
Harrington, C. D.....Minneapolis
Harrington, F. E.....Minneapolis
Harrington, S. W.....Rochester
Harris, C. N.....Hibbing
Harris, L. D.....Minneapolis
Harrison, M. W.....Rochester
Harrison, P. W.....Worthington
Hart, V. L.....Minneapolis
Hart, W. E.....Monticello
Hartfiel, W. F.....St. Paul
Hartley, E. C.....St. Paul
Hartman, H. R.....Rochester
Hartmann, C. M.....Fairfax
Hartnagel, G. F.....Red Wing
Hartung, E. H.....Claremont
Hartzell, T. B.....Minneapolis
Haskell, A. D.....Alexandria
Hassett, M. F.....St. Paul
Hassett, R. G.....Mankato
Hastings, D. R.....Minneapolis
Hatch, W. E.....Duluth
Hathaway, S. J.....Proctor
Hauge, M. I.....Clarkfield
*Hauge, M. M.....Clarkfield
Haugen, J. A.....Minneapolis
Haugseth, Enoch.....Twin Valley
Hauser, V. P.....St. Paul
Havel, H. W.....Jordan
Havel, T. E.....Blue Earth
Haven, W. K.....Minneapolis
Havens, F. Z.....Rochester
Havens, J. G. W.....Austin
Haverfield, Addie R.....Minneapolis
Hawkins, V. J.....St. Paul
Hawkinson, J. P.....Crosby
Hawkinson, R. P.....Minneapolis
Hawn, H. W.....Rochester
Hayden, R. O.....Rochester
Hayes, J. M.....Minneapolis
Hayes, M. F.....Nashwauk
Hays, A. T.....Minneapolis
Head, D. P.....Minneapolis
Head, G. D.....Minneapolis
Heath, A. C.....Stillwater
Hebbel, Robert.....Windom
Hebeisen, M. B.....Chaska
Heck, F. J.....Rochester
Heck, W. W.....St. Paul
Hedback, A. E.....Minneapolis
Hedberg, G. A.....Nopeming
Hedemark, H. H...Thief River Falls
Hedenstrom, F. G.....St. Paul
Hedenstrom, L. H.....Cambridge
Hedin, R. F.....Chicago, Ill.
Heersema, P. H.....Rochester
Hegge, O. H.....Austin
Hegge, R. S.....Austin
Heiam, W. C.....Cook
Heiberg, E. A.....Fergus Falls
Heilman, Charles.....Rochester
Heilman, Dorothy M. H.....Rochester
Heilman, F. R.....Rochester
Heim, R. R.....Minneapolis
Heimark, J. J.....Fairmont
*Heimark, O. E.....Duluth
Heise, Herbert .....Winona
Heise, W. F. C.....Winona
Heise, W. V.....Winona
Helferty, J. K.....Tracy

*Deceased

Helland, G. M.....Spring Grove
Helland, J. W.....Spring Grove
Helmholz, H. F.....Rochester
Helseth, H. K.....Thief River Falls
Hempstead, B. E.....Rochester
Hemstead, Werner.....Brainerd
Hench, P. S.....Rochester
Henderson, A. J. G.....Kiester
Henderson, J. W.....Rochester
Henderson, M. S.....Rochester
Hendricks, Esten.....Minneapolis
Hendrickson, J. F.....Minneapolis
Hendrickson, R. R.....Wabasha
Hengstler, W. H.....St. Paul
Henney, W. H.....McIntosh
Henriksen, H. G.....Northfield
Henrikson, E. C.....Minneapolis
Henry, C. E.....Minneapolis
Henry, C. J.....Milaca
Henry, M. O.....Minneapolis
Hensel, C. N.....St. Paul
Henslin, A. E.....Le Roy
Herbert, W. L.....Granite Falls
Herbolsheimer, A. J.....Minneapolis
Herbst, R. F.....Tofte
Herman, A. L.....Minneapolis
Herman, Samuel.....St. Paul
Hermanson, P. E.....Hendricks
Heron, R. C.....St. Paul
Herrell, W. E.....Rochester
Herrmann, E. T.....St. Paul
Hertel, G. E.....Austin
Hertz, C. S.....Rochester
Hewitt, R. M.....Rochester
Heyerdale, O. C.....Rochester
Heyerdale, W. W.....Rochester
Hiebert, H. L.....Ah-Gwah-Ching
Hiebert, J. P.....Minneapolis
Higgs, W. W.....Park Rapids
Higgins, J. H.....Minneapolis
Hildebrand, Alice G.....Rochester
Hilding, A. C.....Duluth
Hilger, A. W.....St. Paul
Hilger, D. D.....St. Paul
Hilger, L. A.....St. Paul
Hill, Eleanor J.....Minneapolis
Hill, F. E.....Duluth
Hill, J. R.....Rochester
Hilleboe, H. E.....St. Paul
Hillis, S. J.....Minneapolis
Hines, E. A., Jr.....Rochester
Hiniker, L. P.....St. Paul
Hiniker, P. J.....Le Sueur
Hinshaw, H. C.....Rochester
Hirschboeck, F. J.....Duluth
Hirschfelder, A. D.....Minneapolis
Hirschfield, M. S.....Duluth
Hirshfield, F. R.....Minneapolis
Hitchings, W. S.....Lakefield
Hoaglund, A. W.....Minneapolis
Hobbs, C. A.....Minneapolis
Hochfilzer, J. J.....St. Paul
Hodapp, R. J.....Willmar
Hodge, S. V.....Minneapolis
Hodgson, H. H.....Crookston
Hoff, Alfred .....St. Paul
Hoff, H. O.....Duluth
Hoffert, H. E.....Minneapolis
Hoffman, M. H.....St. Paul
Hoffman, H. O. E.....Rochester
Hoffman, R. A.....Minneapolis
Hoffman, W. L.....Minneapolis
Hoidale, A. D.....Tracy
Holbrook, J. S.....Mankato
Holcomb, J. T.....St. Paul
Holcomb, O. W.....St. Paul
Holdridge, G. A.....Foley
Holl, P. M.....Minneapolis
Hollands, W. H.....Fisher
Hollister, C. B. H.....Rochester
Holm, P. F.....Wells
Holmberg, C. J.....Minneapolis
Holmberg, L. J.....Canby
Holmen, R. W.....St. Paul
Holmes, A. E.....Rush City
Holmstrom, C. H.....Warren
Holst, C. F.....Little Falls
Holst, J. B.....Little Falls
Holt, G. W.....Wabasha
Holt, J. E.....St. Paul
Holt, W. B. .....Minneapolis
Holtan, Theodore.....Waterville
Holzapfel, F. C.....Minneapolis
Hopkins, G. W.....St. Paul
Horton, B. T.....Rochester
Hottinger, R. C.....Tanesville
Houkom, Blaine.....Minneapolis
House, Z. E.....Cass Lake
Houston, D. M.....Park Rapids
Hovde, Rolf.....Winthrop
Hovland, M. L.....Minneapolis

Howard, M. A.....St. Paul
Howard, M. I.....Mankato
Howard, W. S.....St. Paul
Howe, R. F.....Rochester
Howell, L. P.....Rochester
Hoyer, L. J.....Windom
Hubbard, O. E.....Brainerd
Hubin, E. G.....Deerwood
Hudec, E. R.....Echo
Hudson, G. E.....Minneapolis
Huenekens, E. J.....Minneapolis
Huffington, H. L.....Mankato
Hullsiek, R. B.....St. Paul
Hultkrans, J. C.....Minneapolis
Hultkrans, R. E.....Minneapolis
Hummer, G. J.....Rochester
Humphrey, E. W.....Moorhead
Humphrey, W. R.....Stillwater
Hunt, A. B.....Rochester
Hunt, R. C.....Fairmont
Hunte, A. F.....Bylas, Ariz.
Hurd, Annah.....Minneapolis
Hursh, M. M.....Hibbing
Hutchinson, C. J.....Minneapolis
Hutchinson, Henry.....Moose Lake
Huxley, F. R.....Faribault
Hymes, Charles.....Minneapolis
Hynes, J. E.....Minneapolis
Ide, A. W.....St. Paul
Ikeda, Kano.....St. Paul
Ingebrigtson, E. K. G.....Moorhead
Ingerson, C. A.....St. Paul
Irvine, H. G.....Minneapolis

Jackman, R. J.....Rochester
Jackson, C. M.....Minneapolis
*Jacobs, A. C.....Elmore
Jacobs, D. L.....Willmar
Jacobs, G. C.....Fergus Falls
Jacobs, J. C.....Willmar
Jacobs, L. G.....Winona
Jacobson, Clarence.....Chisholm
Jacobson, D. J.....Bemidji
Jacquot, G. L.....Marshall
Jamieson, E. F.....Brainerd
Jennings, Mary H.....Minneapolis
Jenovese, J. F.....Rochester
Jensen, A. H.....Hutchinson
Jensen, A. M.....Brownton
Jensen, H. C.....Minneapolis
Jensen, H. H.....Atwater
Jensen, M. J.....Minneapolis
Jensen, R. M.....Rochester
Jensen, T. J.....Duluth
Jesion, J. W.....St. Paul
Johanson, W. G.....St. Paul
Johnson, A. B.....Minneapolis
Johnson, A. E.....Red Wing
Johnson, A. E.....Minneapolis
Johnson, A. M.....St. Paul
Johnson, C. E.....Pine River
Johnson, C. E.....St. Paul
Johnson, C. M.....Dawson
Johnson, D. L.....Little Falls
Johnson, D. W.....Fairmont
Johnson, E. W.....Bemidji
Johnson, E. W.....Minneapolis
Johnson, H. C.....North Mankato
Johnson, H. C.....Thief River Falls
Johnson, Hans.....Kerkhoven
Johnson, H. A.....Minneapolis
Johnson, H. P.....Fairmont
Johnson, H. P.....Harmony
Johnson, J. A.....St. Paul
Johnson, J. A.....Minneapolis
Johnson, Julius.....Minneapolis
Johnson, K. E.....Duluth
Johnson, N. A.....Minneapolis
Johnson, N. P.....Minneapolis
Johnson, N. T.....Minneapolis
Johnson, O. H.....Redwood Falls
Johnson, O. J.....Lyle
Johnson, O. V.....Fergus Falls
Johnson, P. C.....Tyler
Johnson, R. A.....Minneapolis
Johnson, R. B.....Lanesboro
Johnson, R. E.....Minneapolis
Johnson, R. E.....Worthington
Johnson, R. G.....Stillwater
Johnson, S. M.....Minneapolis
Johnson, T. H...San Francisco, Calif.
Johnson, Walfred.....Sauk Centre
Johnson, W. E.....Morgan
Johnson, Y. T.....Minneapolis
Johnston, L. F.....Slayton
Jolin, F. M.....Coleraine
Jolin, R. V.....Grand Rapids
Jones, A. W.....Red Wir
Jones, E. M.....St. Paul
Jones, G. M.....Minneapolis
Jones, H. W.....Minneapolis

Jones, H. W., Jr. ..... Minneapolis
Jones, O. H. ..... Madison Lake
Jones, R. N. ..... St. Cloud
Jones, W. R. ..... Minneapolis
Jordan, L. S. ..... Granite Falls
Josewich, Alexander ..... Minneapolis
Josewski, R. J. ..... Stillwater
Joyce, G. L. ..... Rochester
Judd, E. S., Jr. ..... Rochester
Juergens, H. M. ..... Belle Plaine
Juers, E. H. ..... Red Wing
Juliar, R. O. ..... St. Clair
Jump, W. C. ..... Kasson
Just, H. J. ..... Lafayette

Kaasa, L. J. ..... Albert Lea
Kalin, O. T. ..... Minneapolis
Kalinoff, Demeter ..... Stillwater
Kamman, G. R. ..... St. Paul
Kamp, B. A. ..... Albert Lea
Kannary, E. L. ..... St. Paul
Kanne, C. W. ..... Faribault
Kapernick, J. S. ..... Rochester
Kaplan, D. H. ..... St. Paul
Karlstrom, A. E. ..... Minneapolis
Karn, B. R. ..... Ortonville
Kasper, E. M. ..... St. Paul
Kath, R. H. ..... Woodlake
Kaufman, E. J. ..... Appleton
Kaufman, W. B. ..... Mankato
Kaufman, W. C. ..... Appleton
Kearney, R. W. ..... Rochester
Keating, F. R., Jr. ..... Rochester
Keefe, R. E. ..... St. Paul
Keith, H. M. ..... Rochester
Keith, N. M. ..... Rochester
Kelby, G. M. ..... Minneapolis
*Kelly, B. W. ..... Aitkin
Kelly, J. V. ..... St. Paul
Kelly, P. H. ..... St. Paul
Kelsey, C. G. ..... Hinckley
Kemp, A. F. ..... Mankato
Kemp, M. W. ..... Moose Lake
Kenefick, E. V. ..... St. Paul
Kennedy, C. C. ..... Minneapolis
Kennedy, Jane F. ..... Minneapolis
Kennedy, R. L. J. ..... Rochester
Kennedy, W. A. ..... St. Paul
Kenyon, T. J. ..... St. Paul
Kepler, E. J. ..... Rochester
Kerkhof, A. C. ..... Minneapolis
Kerlan, Irvin ..... Washington, D. C.
..... St. Cloud
Kern, M. J. ..... Rochester
Kernohan, J. W. ..... Rochester
Kerschbaumer, Luisa ..... St. Peter
Kershner, C. M. ..... Rochester
Kertesz, Geza ..... Minneapolis
Kesting, Herman ..... St. Paul
Kettlewell, R. B. ..... Sauk Centre
Keyes, J. D. ..... Winona
Kibbe, O. A. ..... Minneapolis
Kibler, J. M. ..... Rochester
Kierland, P. E. ..... Alexandria
Kierland, R. R. ..... Rochester
Kiesling, I. H. ..... Nashwauk
Kilbride, E. A. ..... Worthington
Kilbride, J. S. ..... Worthington
Killins, J. A. ..... Rochester
Kimmel, J. C., Jr. ..... Rochester
Kindschi, L. G. ..... Rochester
King, E. A. ..... Minneapolis
King, G. L. ..... St. Paul
King, H. E. ..... Rochester
King, H. T. ..... Minneapolis
King, W. L. M. ..... Rochester
Kingsbury, E. M. ..... Clearwater
Kinsella, T. J. ..... Minneapolis
Kirk, G. P. ..... East Grand Forks
Kirklin, B. R. ..... Rochester
Kirklin, O. L. ..... Rochester
Kistler, A. J. ..... Minneapolis
Kistler, C. M. ..... Minneapolis
Klein, A. D. ..... Chisholm
Klein, Harry ..... Duluth
Klein, H. N. ..... St. Paul
Klein, J. C. ..... Shakopee
Knapp, F. N. ..... Duluth
Knapp, M. E. ..... Minneapolis
Knauff, M. K. ..... St. Paul
Knight, R. R. ..... Minneapolis
Knight, R. T. ..... Minneapolis
Knights, J. A. ..... Bemidji
Knutson, G. A. ..... Greenbush
Koelsche, G. A. ..... Rochester
Koepcke, G. M. ..... Minneapolis
Koepsell, A. A. H. ..... St. Paul
Kohlbry, C. O. ..... Duluth
Kohler, D. W. ..... St. Joseph
Kolars, J. J. ..... Le Center

Koller, H. M. ..... Minneapolis
Koller, L. R. ..... Minneapolis
Koop, S. H. ..... Richmond
Korchik, J. P. ..... Minneapolis
Kortsch, F. P. ..... Prior Lake
Kostick, W. R. ..... Fertile
Kotchevar, F. R. ..... Eveleth
Koucky, R. W. ..... Minneapolis
Kowallis, G. F. ..... Rochester
Kozberg, Oscar ..... Moose Lake
Kraft, Peter ..... Duluth
Krause, C. W. ..... Fairmont
Kreuzer, T. C. ..... Owatonna
Krusen, F. H. ..... Rochester
Kucera, F. J. ..... Hopkins
Kucera, S. T. ..... Lonsdale
Kucera, W. J. ..... Minneapolis
Kugler, A. A. ..... St. Paul
Kuhlmann, August ..... Melrose
Kurtin, H. J. ..... Lonsdale
Kusske, A. L. ..... New Ulm
Kuth, J. R. ..... Duluth
Kvale, W. F. ..... Rochester
Kvitrud, Gilbert ..... St. Paul
Kyser, F. A. ..... Rochester

La Bree, R. H. ..... Chisholm
Laird, A. T. ..... Nopeming
Lajoie, J. M. ..... Minneapolis
Lamb, H. L. ..... Little Falls
Lander, H. H. ..... Rochester
Lang, L. A. ..... Minneapolis
Langenderfer, F. V. ..... St. Paul
Langhoff, A. H. ..... Glencoe
Langmack, W. A. ..... Cloquet
Lannin, J. C. ..... Mabel
Lapierre, A. P. ..... Minneapolis
*Lapierre, C. A. ..... Minneapolis
Lapierre, J. T. ..... Minneapolis
Larsen, C. L. ..... St. Paul
Larsen, F. W. ..... Minneapolis
Larsen, O. O. ..... Detroit Lakes
Larson, Arnold ..... Detroit Lakes
Larson, C. M. ..... Minneapolis
Larson, J. T. ..... Lake Wilson
Larson, L. J. ..... Bagley
Larson, L. M. ..... Minneapolis
Larson, L. M. ..... Oak Terrace
Larson, P. N. ..... Minneapolis
La Vake, R. T. ..... Minneapolis
Lax, M. H. ..... St. Paul
Laymon, C. W. ..... Minneapolis
Lazar, H. L. ..... Minneapolis
Leahy, Bartholomew ..... St. Paul
Leary, W. V. ..... Rochester
Leavenworth, R. O. ..... St. Paul
Leavitt, H. H. ..... Minneapolis
Lebowske, J. A. ..... Minneapolis
Leck, P. C. ..... Austin
LeClercq, G. T. A. ..... Boston, Mass.
Leddy, E. T. ..... Rochester
Lee, H. M. ..... Minneapolis
Lee, H. W. ..... Brainerd
Lee, J. L. ..... Watertown
Lee, W. A. ..... Fergus Falls
Lee, W. N. ..... Madison
Leemhuis, G. H. ..... McGregor
Leffel, J. M., Jr. ..... Rochester
Leibold, H. H. ..... Parkers Prairie
Leick, R. M. ..... St. Paul
Leighton, Robert ..... Evansville
Leitch, Archibald ..... St. Paul
Leitch, N. M. ..... Warroad
Leland, H. R. ..... Minneapolis
Leland, J. A. C., Jr. ..... Minneapolis
Leland, J. T. ..... Herman
Lemon, W. S. ..... Rochester
Lenander, M. E. ..... St. Peter
Lenarz, A. J. ..... Browerville
Lende, Norman ..... Faribault
Lenont, C. B. ..... Virginia
Lenz, J. R. ..... Morton
Lenz, O. A. ..... Minneapolis
Leonard, L. J. ..... Minneapolis
Leonard, Samuel ..... Minneapolis
Leopard, B. A. ..... Albert Lea
Lepak, F. J. ..... Duluth
Lepak, J. A. ..... St. Paul
Lerche, William ..... Cable, Wis.
Leven, N. L. ..... St. Paul
Levin, B. G. ..... St. Paul
Levitt, G. X. ..... St. Paul
Lewis, A. J. ..... Henning
Lewis, C. B. ..... St. Cloud
Lewis, E. B. ..... Rochester
Lexa, F. J. ..... Lonsdale
Libert, J. N. ..... St. Cloud
Lick, C. L. ..... St. Paul
Liedloff, A. G. ..... Mankato
Lien, R. J. ..... Rochester
Liffrig, W. W. ..... Goodhue

Lillehei, E. J. ..... Robbinsdale
Lillie, H. I. ..... Rochester
Lima, L. R. ..... Montevideo
Lind, C. J. ..... Minneapolis
Lindberg, A. L. ..... Wheaton
Linde, Herman ..... Cyrus
Lindgren, R. C. ..... Minneapolis
Lindquist, R. H. ..... Minneapolis
Lindsay, W. V. ..... Winona
Linner, H. P. ..... Minneapolis
Linton, W. B. ..... Minneapolis
Lippman, E. S. ..... Minneapolis
Lippman, H. S. ..... St. Paul
Lippmann, E. W. ..... Hutchinson
Lipschultz, Oscar ..... Minneapolis
Lipscomb, P. R. ..... Rochester
Litchfield, J. T. ..... Minneapolis
Litman, A. B. ..... Minneapolis
Litman, S. N. ..... Duluth
Little, A. G., Jr. ..... Rochester
Little, E. H. ..... Rochester
Little, W. J. ..... St. Paul
Litzenberg, J. C. ..... Minneapolis
Lloyd, H. J. ..... Mankato
Lloyd, S. J. ..... Rochester
Lochead, D. C. ..... Rochester
Lockwood, W. W. ..... Fort Peck, Mont.
Logan, A. H. ..... Rochester
Logan, G. B. ..... Rochester
Logefeil, R. C. ..... Minneapolis
Lohmann, J. G. ..... Jasper
Loken, Theodore ..... Ada
Lommen, P. A. ..... Austin
Long, Jesse ..... Minneapolis
Loofbourrow, E. H. ..... Keewatin
Loomis, E. A. ..... Minneapolis
Loomis, G. L. ..... Winona
Love, F. A. ..... Carlos
Love, J. G. ..... Rochester
Love, W. R. ..... Rochester
Lovelace, W. R. ..... Rochester
Lovelady, S. B. ..... Rochester
Lowe, E. R. ..... So. St. Paul
Lowe, T. A. ..... So. St. Paul
Lowry, Elizabeth C. ..... Minneapolis
Lowry, Thomas ..... Minneapolis
Luden, Georgine
Victoria, B. C., Canada
Luedtke, G. H. ..... Fairmont
Lufkin, N. H. ..... Minneapolis
Lund, C. J. T. ..... Underwood
Lundblad, R. A. ..... Minneapolis
Lundblad, S. W. ..... Minneapolis
Lundgren, A. C. ..... Minneapolis
Lundholm, A. M. ..... St. Paul
Lundquist, E. F. ..... Minneapolis
Lundy, J. S. ..... Rochester
Lutz, E. H. ..... Willmar
Lyght, C. E. ..... Northfield
Lynch, F. W. ..... St. Paul
Lynch, M. J. ..... Minneapolis
Lynch, R. C. ..... Rochester
Lynde, O. G. ..... Thief River Falls
Lysne, Henry ..... Minneapolis
Lysne, Myron ..... Minneapolis

Macbeth, J. L. ..... St. Clair
MacDonald, A. E. ..... Minneapolis
MacDonald, D. A. ..... Minneapolis
Macey, H. B. ..... Rochester
Macfarlane, P. H. ..... Chisholm
Mach, F. B. ..... Minneapolis
Mack, J. J. ..... Little Rock, Ark.
MacKay, A. R. ..... Rochester
MacKinnon, D. C. ..... Minneapolis
Macklin, W. E., Jr. ..... Litchfield
MacLean, A. R. ..... Rochester
Macnie, J. S. ..... Minneapolis
MacRae, G. C. ..... Duluth
Madden, J. F. ..... St. Paul
Madding, G. F. ..... Rochester
Mader, J. W. ..... Rochester
Maeder, E. C. ..... Minneapolis
Magath, T. B. ..... Rochester
Magney, F. H. ..... Duluth
Magnusen, A. E. ..... Graceville
Mahle, D. G. ..... Plainview
Mahowald, Aloys ..... Albany
Maino, C. R. ..... Rochester
Maitland, D. P. ..... Jackson
Maitland, E. T. ..... Jackson
Maland, C. O. ..... Minneapolis
Malerich, J. A. ..... Shakopee
Malmstrom, J. A. ..... Virginia
Manley, J. R. ..... Duluth
Mann, F. C. ..... Rochester
Marcley W. J. ..... Nopeming
Marcum, E. H. ..... Bemidji
Mariette, E. S. ..... Oak Terrace
Mark, D. B. ..... Minneapolis
Marken, M. H. ..... Fairmont

*Deceased.

Marking, G. H. ..... Osseo
Markoe, J. C. ..... St. Paul
Marks, R. W. ..... St. Paul
Martin, E. T. ..... Duluth
Martin, T. P. ..... Arlington
Martin, W. C. ..... Duluth
Martineau, J. L. ..... St. Paul
Martinson, C. J. ..... Wayzata
Masson, D. M. ..... Rochester
Masson, J. C. ..... Rochester
Matchan, G. R. ..... Minneapolis
Matthews, Justus ..... Minneapolis
Mattill, P. M. ..... Oak Terrace
Mattison, P. A. ..... Winona
Mattson, C. H. ..... St. Paul
Mattson, H. A. N. ..... Minneapolis
Maun, M. E. ..... St. Paul
Maxeiner, S. R. ..... Minneapolis
May, W. H. ..... Minneapolis
Mayne, R. M. ..... Duluth
*Mayo, C. H. ..... Rochester
Mayo, C. W. ..... Rochester
*Mayo, W. J. ..... Rochester
Maytum, C. K. ..... Rochester
McBroom, D. E. ..... Cambridge
McCallig, J. J. ..... Rochester
McCann, D. F. ..... Bemidji
McCann, E. J. ..... St. Paul
McCannel, D. A. ..... Rochester
McCarten, F. M. ..... Stillwater
McCarthy, Donald ..... Minneapolis
McCarthy, J. J. ..... St. Paul
McCarthy, W. J. ..... Madelia
McCarthy, W. R. ..... St. Paul
McCartney, J. S. ..... Minneapolis
McCarty, P. D. ..... Ely
McCarty, W. C. ..... Rochester
McClanahan, J. H. ... White Bear Lake
McClanahan, T. S. ... White Bear Lake
McComb, C. F. ..... Duluth
McCoy, Mary K. ..... Duluth
McCrimmon, H. P. ..... Minneapolis
*McCrea, James ..... Fulda
McCullough, J. A. L. ..... Rochester
McDaniel, Orianna ..... Minneapolis
McDaniel, S. P. ..... Virginia
McDonald, A. L. ..... Duluth
McDonald, J. R. ..... Rochester
McDonough, F. E. ..... Rochester
McDowell, J. P. ..... St. Cloud
McElmeel, E. F. ..... Pipestone
McEnaney, C. T. ..... Owatonna
McFarland, A. H. ..... Minneapolis
McGandy, R. F. ..... Minneapolis
McGeary, G. E. ..... Minneapolis
McGroarty, J. J. ..... Easton
McGuigan, H. T. ..... Red Wing
McHaffiie, O. L. ..... Duluth
McHeffy, G. J. ..... Rochester
McInerny, M. W. ..... Minneapolis
McIntire, H. M. ..... Waseca
McIntyre, George .. Long Beach, Calif.
McIntyre, J. A. ..... Owatonna
McIver, B. A. ..... Lowry
McKaig, C. B. ..... Pine Island
McKean, F. F. ..... Delavan
McKean, R. S. ..... Rochester
McKelvey, J. L. ..... Minneapolis
McKenna, J. K. ..... Austin
McKenna, M. J. ..... Grand Rapids
McKenzie, C. H. ..... Minneapolis
McKeon, J. O. ..... Montgomery
McKinlay, C. A. ..... Minneapolis
McKinley, J. C. ..... Minneapolis
McKinney, F. S. ..... Minneapolis
McKinnon, D. A., Jr. ..... Rochester
McLane, Evelyn G. ..... Jackson
McLane, W. O. ..... Perham
McLaren, Jennette M. ..... Minneapolis
McLaughlin, E. M. ..... Winona
McLennan, C. E. ..... Minneapolis
McLeod, J. L. ..... Grand Rapids
McLoughlin, C. J. ..... Rochester
McMahon, L. H. ..... Breckenridge
McMahon, M. J. ..... Green Isle
McManamy, E. P. ..... Rochester
McNevin, C. F. ..... St. Paul
McNutt, J. R. ..... Duluth
McPheeters, H. O. ..... Minneapolis
McQuarrie, Irvine ..... Minneapolis
Mead, C. H. ..... Duluth
Meade, J. R. ..... St. Paul
Mears, B. J. ..... St. Paul
Medelman, J. P. ..... St. Paul
Meinert, A. E. ..... Winona
Meland, E. L. ..... Minneapolis
Melby, Bendik ..... Blooming Prairie
Mellby, O. F. ..... Thief River Falls
Melzer, G. R. ..... Lyle

Mercil, W. F. ..... Crookston
Merkert, C. E. ..... Minneapolis
Merkert, G. L. ..... Minneapolis
Merrill, Elisabeth ..... Minneapolis
Merrill, Robert ..... Morris
Merriman, L. L. ..... Duluth
Merritt, W. A. ..... Rochester
Mesker, G. H. ..... Olivia
Meyer, A. A. ..... Melrose
Meyer, E. L. ..... Minneapolis
Meyer, F. C. ..... Kenyon
Meyer, J. O. ..... Grand Rapids
Meyer, P. F. ..... Faribault
Meyerding, E. A. ..... St. Paul
Meyerding, H. W. ..... Rochester
Michael, J. C. ..... Minneapolis
Michel, H. H. ..... Minneapolis
Michelson, H. E. ..... Minneapolis
Mickelson, J. C. ..... Mankato
Miller, E. W. ..... St. Peter
Miller, H. A. ..... Fairmont
Miller, H. E. ..... Minneapolis
Miller, J. C. ..... Minneapolis
Miller, J. M. ..... Rochester
Miller, V. I. ..... Mankato
Miller, W. A. ..... New York Mills
Mills, J. L. ..... Winnebago
Milton, J. S. ..... Minneapolis
Miners, G. A. ..... Deer River
Mingo, F. E. ..... Hugo
Mitby, I. L. ..... Aitkin
Mitchell, E. C. ..... Minneapolis
Mitchell, R. S. ..... Grand Meadow
Moberg, C. W. ..... Detroit Lakes
Moe, J. H. ..... Minneapolis
Moe, R. J. ..... Duluth
Moe, Thomas ..... Moose Lake
Moen, J. K., Jr. ..... Minneapolis
Moersch, F. P. ..... Rochester
Moersch, H. J. ..... Rochester
Moga, J. A. ..... St. Paul
Moir, W. W. ..... Minneapolis
Molander, H. A. ..... St. Paul
Mollers, T. P. ..... Mountain Iron
Monroe, P. B. ..... Two Harbors
Monson, E. M. ..... Minneapolis
Monson, L. J. ..... Canby
Monserud, N. O. ..... Cloquet
Montgomery, Hamilton ..... Rochester
Mooney, L. P. ..... Graceville
*Moorhead, Martha B. ..... Minneapolis
Moos, D. J. ..... St. Cloud
Moquin, Marie A. ..... St. Paul
More, C. W. ..... Eveleth
Morehead, D. E. ..... Owatonna
Moren, Edward ..... Minneapolis
Morgan, H. O. ..... Amboy
Moriarty, Berenice ..... St. Paul
Moriarty, Cecile R. ..... St. Paul
Morissette, Leopold ..... Rochester
Mork, B. O., Jr. ..... Worthington
Mork, B. O., Sr. ..... Worthington
Mork, F. E. ..... Anoka
Morley, G. A. ..... Crookston
Morlock, C. G. ..... Rochester
Morrison, A. W. ..... Minneapolis
Morrison, Charlotte J. ..... Minneapolis
Morrissey, F. B. ..... St. Paul
Morrow, J. J. ..... Austin
Morse, M. P. ..... Le Roy
Morse, R. W. ..... Minneapolis
Morsman, L. W. ..... Hibbing
Mortensbak, H. E. ..... Hanska
*Morton, H. McI. ... Vincentown, N. J.
Mosby, M. E. ..... Long Prairie
Moses, Joseph, Jr. ..... Northfield
Mountain, G. E. ..... Rochester
Mouritsen, G. J. ..... Fergus Falls
Moss, M. N. ..... St. Paul
Mousel, L. H. ..... Rochester
Moyer, R. E. ..... Faribault
*Moynihan, T. J. ..... St. Paul
Mueller, R. F. ..... Two Harbors
Mueller, Selma C. ..... Duluth
Muir, W. F. ..... Graceville
Muller, R. T. ..... St. Paul
Mulligan, A. M. ..... Brainerd
Mulrooney, R. E. ..... Rochester
Munn. Elizabeth L. ..... Rochester
Murphy, E. P. ..... Minneapolis
Murphy, I. J. ..... Minneapolis
Murray, R. A. ..... Aitkin
Musachio, N. F. ..... Milaca
Mussey, R. D. ..... Rochester
Myers, J. A. ..... Minneapolis
Myers, Thomas ..... St. Paul
Myre, C. R. ..... Paynesville

Naegeli, A. E. ..... St. Paul
Naegeli, Frank ..... Fergus Falls
Nagel, H. D. ..... Waconia

Nash, L. A. ..... Rochester
Naslund, A. W. ..... St. Paul
Nass, H. A. ..... Mabel
Nauth, W. W. ..... Winona
Neal, J. M. ..... Minneapolis
Nealy, D. E. ..... Adrian
Neary, R. P. ..... Minneapolis
Neel, H. B. ..... Rochester
Neff, W. S. ..... Virginia
*Neher, F. H. ..... St. Paul
Nehring, J. P. ..... Preston
*Neilson, H. F. ..... Minneapolis
Nelson, E. H. ..... Chisholm
Nelson, E. J. ..... Owatonna
Nelson, H. E. ..... Crookston
Nelson, H. S. ..... Excelsior
Nelson, K. L. ..... Minneapolis
Nelson, L. A. ..... St. Paul
Nelson, M. S. ..... Granite Falls
Nelson, N. H. ..... Minneapolis
Nelson, N. P. ..... Brainerd
Nelson, O. L. N. ..... Minneapolis
Nelson, R. L. ..... Duluth
Nelson, W. I. ..... Minneapolis
Nelson, W. O. B. ..... Fergus Falls
Nesbitt, Samuel ..... Rochester
Neumaier, Arthur ..... Lindstrom
Neumann, C. A. ..... Winona
New, G. B. ..... Rochester
Newhart, Horace ..... Minneapolis
Nichols, A. E. ..... St. Paul
Nicholson, M. A. ..... Duluth
Nickel, W. R. ..... Rochester
*Nilles, L. J. ..... Rollingstone
Nilson, H. J. ..... North Mankato
Nissen, A. S. ..... St. Peter
Noble, J. F. ..... St. Paul
Noble, J. L. ..... St. Paul
Nordholm, V. W. ..... Ellsworth, Wis.
Nordin, G. T. ..... Minneapolis
Nordland, Martin ..... Minneapolis
Nordman, W. F. ..... Mora
Norman, J. F. ..... Crookston
Norris, N. T. ..... Caledonia
Noth, H. W. ..... Minneapolis
Novak, E. E. ..... New Prague
Nuebel, C. J. ..... St. Paul
Nuessle, W. G. ..... Springfield
Nuetzman, A. W. ..... Faribault
Nutting, R. E. ..... Duluth
Nydahl, M. J. ..... St. Paul
Nye, Katherine A. ..... St. Paul
Nye, Lillian L. ..... St. Paul
Nygren, W. T. ..... Braham
Nylander, E. G. ..... Minneapolis
Nystrom, Ruth G. ..... Minneapolis

Oberg, C. M. ..... Minneapolis
O'Brien, J. P. ..... Rochester
O'Brien, W. A. ..... Minneapolis
O'Brien, W. M. ..... St. Paul
Ochsner, C. G. ..... Wabasha
O'Connor, L. J. ..... St. Paul
Odel, H. M. ..... Rochester
O'Donnell, D. M. ..... Ortonville
O'Donnell, J. E. ..... Minneapolis
Oeljen, S. C. G. ..... Waseca
Oerting, Harry ..... St. Paul
Ogden, Warner ..... St. Paul
Ohage, Justus, Jr. ..... St. Paul
O'Hanlon, J. A. ..... Proctor
Ohnstad, J. L. ..... McIntosh
Olds, G. H. ..... Waseca
Olds, J. W. ..... Rochester
O'Leary, J. H. ..... Staples
O'Leary, P. A. ..... Rochester
Oliver, C. I. ..... Graceville
Oliver, I. L. ..... Graceville
Olmanson, E. G. ..... St. Peter
Olsen, A. M. ..... Rochester
Olsen, E. G. ..... Minneapolis
Olson, A. C. ..... Minneapolis
Olson, A. E. ..... Duluth
Olson, A. O. ..... Duluth
Olson, C. A. ..... St. Paul
Olson, C. J. ..... Belle Plaine
Olson, D. C. ..... Gaylord
Olson, E. A. ..... Pine Island
Olson, F. A. ..... Minneapolis
Olson, G. E. ..... West Concord
Olson, O. A. ..... Minneapolis
Olson, R. G. ..... Minneapolis
Onsgard, L. K. ..... Houston
Oppegaard, C. L. ..... Crookston
Oppegaard, M. O. ..... Crookston
Oppen, E. G. ..... Minneapolis
O'Reilley, B. E. ..... St. Paul
Ormond, D. T. ..... Waconia
*Osborn, Lida ..... Mankato
Ostergren, E. W. ..... St. Paul
Otto, H. C. ..... Frazee

*Deceased

Ouellette, A. J. ..... St. Paul
Owre, Oscar ..... Minneapolis

Page, C. V. ..... St. Paul
Page, R. L. ..... St. Charles
Paine, J. R. ..... Minneapolis
Palmer, C. F. ..... Albert Lea
Palmer, H. A. ..... Blackduck
Palmer, W. L. ..... Albert Lea
Pankratz, P. J. ..... Mountain Lake
Pansch, F. N. ..... Rochester
Paradis, W. G. ..... Crookston
Parker, O. W. ..... Ely
Parker, R. L. ..... Rochester
Parker, W. H. ..... Chisholm
Parkhill, Edith M. ..... Rochester
Parson, E. I. ..... Askov
Parson, L. R. ..... Elbow Lake
Parson, Lillian B. ..... Elbow Lake
Parsons, J. G. ..... Crookston
Pasek, A. W. ..... Cloquet
Passer, A. A. ..... Olivia
Pastore, P. N. ..... Rochester
Patterson, W. E. ..... Minneapolis
Patterson, W. L. ..... Fergus Falls
Pattison, D. H. ..... Rochester
Patton, G. D. ..... Pittsburgh, Pa.
*Paulsen, E. L. ..... Minneapolis
Paulson, E. C. ..... Dalton
Paulson, D. L. ..... Rochester
Paulson, J. A. ..... Rochester
Paulson, T. S. ..... Fergus Falls
Pearman, R. O. D. ..... Rochester
Pearsall, R. P. ..... Virginia
Pearson, B. F. ..... Shakopee
Pearson, F. R. ..... St. Paul
Peck, L. D. ..... Hastings
Peck, L. R. ..... Hastings
Pedersen, R. C. ..... Duluth
Pederson, R. M. ..... Minneapolis
Pelant, F. J. ..... New Ulm
Pellettiere, E. V. ..... Thief River Falls
Pemberton, J. deJ. ..... Rochester
Penhall, F. W. ..... Morton
Penn, G. E. ..... Mankato
Pennie, D. F. ..... Duluth
Pennington, R. E. ..... Rochester
Pennington, Reuben ..... Minneapolis
Peppard, T. A. ..... Minneapolis
Perozzi, Thelma ..... Santa Barbara, Calif.
Perry, C. G. ..... St. Paul
Pertl, A. L. ..... Canby
Peters, G. A. ..... Rochester
Petersen, J. R. ..... Minneapolis
Petersen, M. C. ..... Willmar
Petersen, P. C. ..... Braham
Petersen, Thorvald ..... Minneapolis
Peterson, A. A. ..... Mora
Peterson, D. B. ..... St. Paul
Peterson, E. N. ..... Virginia
Peterson, H. O. ..... Minneapolis
Peterson, H. W. ..... Minneapolis
Peterson, J. H. ..... Duluth
Peterson, J. L. E. ..... St. Paul
Peterson, N. P. ..... Minneapolis
Peterson, O. H. ..... Minneapolis
Peterson, O. L. ..... Cokato
Peterson, P. E. ..... Minneapolis
Peterson, R. A. ..... Vesta
Peterson, V. N. ..... St. Paul
Peterson, W. C. ..... Minneapolis
Peterson, W. G. ..... Rochester
Peterson, W. H. ..... Minneapolis
Petit, L. J. ..... Minneapolis
Petraborg, H. T. ..... Aitkin
Peyton, W. T. ..... Minneapolis
Pfuetze, K. H. ..... Nopeming
Pfunder, M. C. ..... Minneapolis
Phalen, G. S. ..... Rochester
Phelps, K. A. ..... Minneapolis
Phillips, A. E. ..... Delano
Phillips, R. B. ..... Rochester
Phillips, W. H. ..... Jordan
Pierce, C. H. ..... Wadena
Piper, M. C. ..... Rochester
Piper, W. A. ..... Mountain Lake
Platou, E. S. ..... Minneapolis
Plimpton, N. C., Jr. ..... Rochester
Plondke, F. J. ..... St. Paul
Plonske, C. J. ..... Faribault
Plowman, E. T. ..... Marble
Plummer, W. A. ..... Rochester
Pogue, R. E. ..... Watertown
Pohl, J. F. ..... Minneapolis
Poirier, J. A. ..... Forest Lake
Pollard, D. W. ..... Minneapolis
Pollock, D. K. ..... Minneapolis
Pollock, G. A. ..... Rochester
Pollock, L. W. ..... Rochester

Polzak, J. A. ..... Minneapolis
Pool, T. L. ..... Rochester
Popp, W. C. ..... Rochester
Poppe, F. H. ..... Minneapolis
Potek, David ..... International Falls
Potthoff, C. J. ..... Minneapolis
Power, J. E. ..... Duluth
Powers, F. H. ..... Rochester
Prangen, A. D. ..... Rochester
Pratt, F. J. ..... Minneapolis
Pratt, J. A. ..... Minneapolis
Preine, I. A. ..... Minneapolis
Preisinger, J. W. ..... Renville
Prendergast, H. J. ..... St. Paul
Prendergast, J. J. ..... St. Paul
Prickman, L. E. ..... Rochester
Priestley, J. T. ..... Rochester
Prim, J. A. ..... Minneapolis
Prins, L. R. ..... Albert Lea
Proeschel, R. K. ..... Willmar
Proshek, C. E. ..... Minneapolis
Prunty, F. C. ..... Rochester
Pugh, D. G. ..... Rochester
Purves, G. H. ..... Lake Benton
Puumala, R. H. ..... Cloquet

Quanstrom, V. E. ..... Brainerd
Quello, R. O. B. ..... Minneapolis
Quill, T. H. ..... Rochester
Quinby, T. F. ..... Lake Wales, Fla.
Quist, H. W. ..... Minneapolis

Raadquist, C. S. ..... Hibbing
Radabaugh, R. C. ..... Hastings
Raetz, S. J. ..... Maple Lake
Raihala, John ..... Virginia
Raiter, F. W. S. ..... Cloquet
Raiter, R. F. ..... Cloquet
Ralph, R. D. ..... Rochester
Ramsey, W. R. ..... St. Paul
Randall, A. M. ..... Ashby
Randall, K. C. II ..... Rochester
Randall, L. M. ..... Rochester
Ransom, M. L. ..... Hancock
Rasmussen, R. C. ..... Minneapolis
Rasmussen, T. B. ..... Montreal, Can.
Rasmussen, W. C. ..... Rochester
Raszkowski, H. J. ..... Rochester
Ratcliffe, J. ..... Aitkin
Rathbun, C. A. ..... St. Cloud
Raymond, J. H. ..... Triumph
Rea, C. E. ..... Minneapolis
Reed, C. A. ..... Minneapolis
Reeser, Richard, Jr. ..... Rochester
Reeve, E. A. T. ..... Elbow Lake
Redding, M. D. ..... Rochester
Reff, A. R. ..... Crookston
Regnier, E. A. ..... Minneapolis
Rein, G. N. ..... Rochester
Reineke, G. F. ..... New Ulm
Reiter, H. W. ..... Shakopee
Replogle, W. H. ..... Wabasha
Rewbridge, A. G. ..... Minneapolis
Reynolds, J. S. ..... Minneapolis
Rice, C. O. ..... Minneapolis
Rice, H. G. ..... Moorhead
Richards, E. T. F. ..... St. Paul
Richards, W. B. ..... St. Cloud
Richardson, F. S. ..... Minneapolis
Richardson, H. E. ..... St. Paul
Richardson, R. J. ..... Rushford
Richardson, W. E. ..... Rushford
Richdorf, L. F. ..... Minneapolis
Rick, P. F. W. ..... St. Paul
Ridgway, A. M. ..... Annandale
Rieke, W. W. ..... Wayzata
Rigler, L. G. ..... Minneapolis
Rimer, E. W. ..... Breckenridge
Ringle, O. F. ..... Walker
Ripple, R. J. ..... New London
Risch, R. E. ..... Minneapolis
Rishmiller, J. H. ..... Minneapolis
Risser, A. F. ..... Stewartville
Risser, E. D. ..... Winona
Ritchie, H. P. ..... St. Paul
Ritchie, W. P. ..... St. Paul
Ritt, A. E. ..... St. Paul
Rivers, A. B. ..... Rochester
Rizer, R. I. ..... Minneapolis
Roan, C. M. ..... Minneapolis
Robb, E. F. ..... Minneapolis
Robbins, C. P. ..... Winona
Robbins, O. F. ..... Minneapolis
Roberts, L. M. ..... Little Falls
Roberts, O. W. ..... Owatonna
Roberts, T. S. ..... Minneapolis
Roberts, W. B. ..... Minneapolis
Robertson, F. O. ..... East Grand Forks
Robertson, H. E. ..... Rochester
Robertson, J. B. ..... Minneapolis
Robertson, P. A. ..... Austin

Robilliard, C. M. ..... Faribault
Robinson, F. J. ..... Rochester
Robinson, J. M. ..... Duluth
Robitshek, E. C. ..... Minneapolis
Rochford, W. E. ..... Minneapolis
Rodda, F. C. ..... Minneapolis
Roehlke, A. B. ..... Elk River
Roemer, H. J. ..... Winona
Rogers, C. W. ..... Heron Lake
Rogers, S. F. ..... St. Paul
Rogne, W. G. ..... Spring Grove
Roholt, C. L. ..... Waverly
Rohrer, C. A. ..... Waterville
Rokala, H. E. ..... Biwabik
Rolig, D. H. ..... Howard Lake
Rood, D. C. ..... Duluth
Rose, J. T. ..... Lakefield
Rosen, Samuel ..... Minneapolis
Rosenberg, E. F. ..... Rochester
Rosenbladt, Louis ..... St. Paul
Rosenfield, A. B. ..... Hibbing
Rosenholtz, B. I. ..... St. Paul
Rosenow, E. C. ..... Rochester
Rosenow, E. C., Jr. ..... Rochester
Rosenstiel, H. C. ..... Rochester
Rosenthal, Robert ..... St. Paul
Rosenwald, R. M. ..... Minneapolis
Roskilly, G. C. P. ..... Minneapolis
Ross, A. J. ..... Minneapolis
Rossen, R. X. ..... Hastings
Roth, F. D. ..... Lewiston
*Rothenburg, J. C. ..... Springfield
Rothrock, J. L. ..... St. Paul
Rothschild, H. J. ..... St. Paul
*Rousseau, Victor ..... Maple Lake
Roust, H. A. ..... Montevideo
Rowe, O. W. ..... Duluth
Rowe, W. H. ..... Fairmont
Rowles, E. K. ..... Coleraine
Roy, J. A. ..... Red Lake Falls
Roy, P. C. ..... St. Paul
Rucker, C. W. ..... Rochester
Rucker, W. H. ..... Minneapolis
Rud, N. E. ..... Minneapolis
Rudell, G. L. ..... Minneapolis
Rudie, P. S. ..... Duluth
Ruggles, G. McC. ..... Forest Lake
Ruhberg, G. N. ..... St. Paul
Rumpf, C. W. ..... Faribault
Rumpf, W. H., Jr. ..... St. Cloud
Rumpf, W. H. ..... Faribault
Rushton, J. G. ..... Rochester
Russ, H. H. ..... Blue Earth
Russeth, A. N. ..... Minneapolis
Rusten, E. M. ..... Minneapolis
Rutherford, W. C. ..... St. Paul
Rutledge, D. I. ..... Rochester
Rutledge, L. H. ..... Detroit Lakes
Ryan, J. J. ..... St. Paul
Ryan, J. M. ..... St. Paul
Ryan, M. E. ..... St. Paul
Ryan, W. J. ..... Duluth
Rynearson, E. H. ..... Rochester

Sach-Rowitz, Alvan ..... Moose Lake
Sadler, W. P., Jr. ..... Minneapolis
Saffert, C. A. ..... New Ulm
Sahr, W. G. ..... Hutchinson
St. Cyr, K. J. ..... Osseo
Salt, C. G. ..... Minneapolis
Salter, R. A. ..... Virginia
Samson, E. R. ..... Stillwater
Samuelson, L. G. ..... Mankato
Samuelson, Samuel ..... Minneapolis
Sanderson, A. G. ..... Granite Falls
Sandt, K. E. ..... Minneapolis
Sandven, N. O. ..... Paynesville
Sanford, A. H. ..... Rochester
Sarff, O. E. ..... Virginia
Sarnecki, M. M. ..... St. Paul
Satersmoen, Theodore ..... Pelican Rapids
Sather, Allen ..... Fosston
Sather, E. R. ..... Alexandria
Sather, G. A. ..... Fosston
Sather, R. O. ..... Crookston
Satterlee, H. W. ..... Lewiston
Satterlund, V. L. ..... St. Paul
Savage, F. J. ..... St. Paul
Sawatzky, W. A. ..... Minneapolis
Sax, S. G. ..... Duluth
Schaaf, F. H. K. ..... Minneapolis
Schade, F. L. ..... Worthington
Schaefer, J. F. ..... Owatonna
Schaefer, Samuel ..... Winona
Schaefer, W. G. ..... Minneapolis
Schamber, W. F. ..... Parkers Prairie
Schatz, F. J. ..... St. Cloud
Scheifley, C. H. ..... Rochester
Scheldrup, N. H. ..... Minneapolis
Scherer, C. A. ..... Duluth
Scherer, L. R. ..... Minneapolis

*Deceased

Schicle, B. C. ..... Minneapolis
Schimelpfenig, G. T. ..... Chaska
Schleinitz, F. B. ..... Battle Lake
Schlesselman, G. H. ..... Anoka
Schlesselman, J. T. ..... Mankato
Schlicke, C. P. ..... Rochester
Schmidt, G. F. ..... Minneapolis
Schmidt, H. W. ..... Rochester
Schmidt, P. A. ..... Good Thunder
Schmidt, P. G., Jr. ..... Granite Falls
Schmidt, W. R. ..... Worthington
Schmitt, A. F. ..... Minneapolis
Schmitt, G. F., Jr. ..... Rochester
Schmitt, S. C. ..... Los Angeles, Calif.
Schneider, H. H. ..... Rochester
Schneider, J. P. ..... Minneapolis
Schneider, P. J. ..... Adams
Schneidman, N. R. ..... Minneapolis
Schoch, R. B. J. ..... St. Paul
Scholpp, O. W. ..... Hutchinson
Schons, Edward ..... St. Paul
Schottler, G. J. ..... Dexter
Schottler, M. E. ..... Minneapolis
Schroder, C. H. ..... Duluth
Schroeppel, J. E. ..... Winthrop
Schuldt, F. C. ..... St. Paul
Schulte, T. L. ..... Rochester
Schultz, J. A. ..... Albert Lea
Schultz, P. J. ..... Minneapolis
Schulze, A. G. ..... St. Paul
Schunke, G. B. ..... Rochester
Schussler, O. F. ..... Minneapolis
Schutz, E. S. ..... Mountain Lake
Schwartz, E. R. ..... Stewartville
Schwartz, V. J. ..... Minneapolis
Schweiger, L. R. ..... Rochester
Schweiger, T. R. ..... Hibbing
Schwyzer, Arnold ..... St. Paul
Schwyzer, Gustav ..... Minneapolis
Scofield, C. L. ..... Benson
Scott, E. E. ..... St. Paul
Scott, F. H. ..... Minneapolis
Scott, H. G. ..... Minneapolis
Sealy, W. B. ..... Rochester
Seashore, Gilbert ..... Minneapolis
Seashore, R. T. ..... Duluth
Seedorf, E. E. ..... Rochester
Seeley, I. F. ..... Northfield
Seham, Max ..... Minneapolis
Seifert, M. H. ..... Excelsior
Seifert, O. J. ..... New Ulm
Seitz, S. B. ..... Barnesville
Seldon, T. H. ..... Rochester
Seljeskog, S. R. ..... Minneapolis
Selleseth, I. F. ..... Minneapolis
Senkler, G. E. ..... St. Paul
Senn, E. W. ..... Owatonna
Serkland, J. C. ..... Rothsay
Sessions, J. C. ..... Minneapolis
Sether, A. F. ..... Ruthton
Settlage, A. F. E. ..... Worthington
Setzer, H. J. ..... St. Paul
Shaleen, A. W. ..... Hallock
Shaperman, Eva P. ..... Minneapolis
Shapiro, E. Z. ..... Duluth
Shapiro, M. J. ..... Minneapolis
Sharp, D. V. ..... Minneapolis
Sharpe, W. S. ..... Rochester
Shastid, T. H. ..... Duluth
Shaw, A. W. ..... Virginia
Shedlov, Abraham ..... Fosston
Sheedy, C. L. ..... Austin
Shelden, W. D. ..... Rochester
Sheldon, C. H. ..... Rochester
Shellman, J. L. ..... St. Paul
Shephard, V. D. ..... Rochester
Sheppard, C. G. ..... Hutchinson
Sheppard, P. E. ..... Hutchinson
Sher, D. A. ..... Austin
Sherman, C. H. ..... Bayport
Sherman, C. L. ..... Luverne
Sherwood, G. E. ..... Kimball
Shillington, M. A. ..... Glendive, Mont.
Shimonek, S. W. ..... St. Paul
Short, Jacob ..... St. Paul
Shrader, J. S. ..... Marietta
Siegel, J. S. ..... Virginia
Siegmann, W. C. ..... Minneapolis
Silver, J. D. ..... Minneapolis
Simison, Carl ..... Barnesville
Simison, C. W. ..... Hawley
Simons, B. H. ..... Chaska
Simons, E. J. ..... Swanville
Simons, J. H. ..... Minneapolis
Simons, L. T. ..... St. Paul
Simons, S. J. ..... Akeley
Simonson, D. B. ..... Minneapolis
Simonton, K. M. ..... Rochester.
Simpson, E. D. ..... Minneapolis

*Deceased

Sinamark, Andrew ..... Hibbing
Singer, B. J. ..... St. Paul
Siperstein, D. M. ..... Minneapolis
Sisler, C. E. ..... Grand Rapids
Sivertsen, Andrew ..... Mound
Sivertsen, Ivar ..... Minneapolis
Sjostrom, L. E. ..... Storden
Skaug, H. M. ..... Chatfield
Skinner, H. O. ..... St. Paul
Skjold, A. C. ..... Minneapolis
Slater, S. A. ..... Worthington
Sloan, Julius ..... Minneapolis
Slocumb, C. H. ..... Rochester
Slocumb, J. A. ..... Plainview
Slyfield, F. F. ..... Duluth
Smisek, E. A. ..... St. Paul
Smisek, F. M. E. ..... Minneapolis
Smith, A. E. ..... Minneapolis
Smith, Archie M. ..... Minneapolis
Smith, A. M. ..... Minneapolis
Smith, B. A. ..... Crosby
Smith, B. F. ..... Rochester
Smith, C. M. ..... Duluth
Smith, F. A. ..... Rochester
Smith, F. D. ..... Rochester
Smith, F. L. ..... Rochester
Smith, G. G. ..... Fulda
Smith, H. L. ..... Rochester
Smith, H. R. ..... Minneapolis
Smith, K. A. ..... Rochester
Smith, L. A. ..... Balaton
Smith, L. A. ..... Rochester
Smith, L. G. ..... Montevideo
Smith, M. W. ..... Red Wing
Smith, N. D. ..... Rochester
Smith, N. M. ..... Minneapolis
Smith, R. L., Jr. ..... Rochester
Smith, S. J. ..... Eveleth
Smith, V. D. E. ..... St. Paul
Smith, W. R. ..... Grand Marais
Snell, A. M. ..... Rochester
Snyder, G. W. ..... St. Paul
Snyder, J. M. ..... Rochester
Snyker, O. E. ..... Ely
Soderlind, R. T. ..... Minneapolis
Sogge, L. L. ..... Windom
Sohlberg, O. I. ..... St. Paul
Sohmer, A. E. ..... Mankato
Solhaug, S. B. ..... Minneapolis
Sommer, A. W. ..... Elmore
Soniat, T. L. L. ..... Rochester
Sonnesyn, N. N. ..... Le Sueur
Sorum, F. T. ..... Jasper
Souster, B. B. ..... St. Paul
Spang, A. J. ..... Duluth
Spano, J. P. ..... Minneapolis
Sperling, Louis ..... Minneapolis
Spicer, F. W. ..... Duluth
Spink, W. W. ..... Minneapolis
Spittler, R. O. ..... Waseca
Sprafka, J. M. ..... St. Paul
Sprague, R. G. ..... Rochester
Spratt, C. N. ..... Minneapolis
Spurbeck, R. G. ..... Cloquet
Spurzem, R. J. ..... Anoka
Squire, E. W. ..... Rochester
Stafford, C. E. ..... Hewitt
Stafford, D. E. ..... Rochester
Staine, W. A. ..... Moorhead
Stalker, L. K. ..... Rochester
Stanford, C. E. ..... Minneapolis
*Stangl, F. H. ..... St. Cloud
Stangl, P. E. ..... St. Cloud
Stanley, C. R. ..... Worthington
Stebbins, T. L. ..... Minneapolis
Steffens, L. A. ..... Red Wing
Stein, R. J. ..... Pierz
Steinberg, C. L. ..... St. Paul
Steiner, I. W. ..... Winona
Stelter, L. A. ..... Minneapolis
Stemsrud, H. L. ..... Parkers Prairie
Stenstrom, Annette E. T. .. Minneapolis
Stephan, E. I. ..... Hinckley
Sterner, E. G. ..... St. Paul
Sterner, E. R. ..... St. Paul
Steube, R. W. ..... St. Paul
Stevens, John ..... Gonvick
Stevenson, B. M. ..... Fulda
Stewart, Alexander ..... St. Paul
Stewart, A. B. ..... Owatonna
Stewart, C. A. ..... Minneapolis
Stewart, E. W. ..... Grand Rapids
Stewart, N. E. ..... St. Cloud
Stewart, R. I. ..... Minneapolis
Sticknev, J. M. ..... Rochester
Stillwell, W. C. ..... Mankato
Stinnette, S. E. ..... St. Paul
Stocking, F. F. ..... Hallock
Stoeckmann, A. E. ..... St. Paul
Stoesser, A. V. ..... Minneapolis
Stolpestad, A. H. ..... St. Paul

Stolpestad, H. L. ..... St. Paul
Stomel, Joseph ..... Los Angeles, Calif.
Strachauer, A. C. ..... Minneapolis
Strand, E. V. ..... Bayport
Stransky, T. W. ..... Owatonna
Strate, G. E. ..... St. Paul
Strathern, C. S. ..... St. Peter
Strathern, F. P. ..... St. Peter
Strathern, M. L. ..... Gilbert
Stratte, A. K. ..... Pine City
Stratte, H. C. ..... Windom
Straus, M. L. ..... St. Paul
Street, Bernard ..... St. Cloud
Strobel, W. G. ..... Duluth
Stroebel, C. F., Jr. ..... Northfield
Stromgren, D. T. ..... Minneapolis
*Strout, E. S. ..... Minneapolis
Strout, G. E. ..... Minneapolis
Stuart, A. B. ..... Cloquet
Stuhler, L. G. ..... Rochester
Stuhr, J. W. ..... Stillwater
Sturre, J. R. ..... Minneapolis
Stuurmans, S. H. ..... Erskine
Sukeforth, L. A. ..... Duluth
Sullivan, R. M. ..... Minneapolis
Sullivan, R. R. ..... Minneapolis
Sundt, Mathias ..... Minneapolis
Sutherland, C. G. ..... Rochester
Sutherland, H. N. ..... Ely
Sutton, C. S. ..... St. Cloud
Sutton, H. R. ..... Hoffman
Swanson, Cephas ..... Minneapolis
Swanson, J. A. ..... St. Paul
Swanson, P. E. ..... Virginia
Swanson, R. E. ..... Minneapolis
Swanson, R. R. ..... Albert Lea
Swartz, F. C. ..... Rochester
Swedburg, W. A. ..... Duluth
Swedenburg, P. A. ..... Swanville
Sweetser, H. B., Jr. ..... Minneapolis
Sweetser, H. B., Sr. ..... Minneapolis
Sweetser, T. H. ..... Minneapolis
Sweitzer, S. E. ..... Minneapolis
Swendseen, C. G. ..... Minneapolis
Swendson, J. J. ..... St. Paul
Swensen, R. G. ..... North Branch
Swenson, A. O. ..... Duluth
Swenson, O. J. ..... Waseca
Swezey, B. F. ..... Bellingham
Swingle, H. F. ..... Rochester
Sybilrud, H. W. ..... Bricelyn

Tangen, G. M. ..... Canby
Tanglin, W. G. L. ..... Mahnomen
Tanquist, E. J. ..... Alexandria
Taylor, C. W. ..... Duluth
Taylor, J. H. ..... Minneapolis
Teisberg, C. B. ..... St. Paul
Telford, V. J. ..... Litchfield
Tenner, R. J. ..... Rochester
Tennison, W. J. ..... Rochester
Terrell, B. J. ..... Nopeming
Tesch, G. H. ..... Elk River
Thabes, J. A. ..... Brainerd
Thabes, J. A., Jr. ..... Brainerd
Thayer, E. A. ..... Truman
Thielen, R. D. ..... St. Michael
Thigpen, F. M. ..... Rochester
Thomas, G. E. ..... Minneapolis
Thomas, G. H. ..... Minneapolis
Thomas, G. J. ..... Minneapolis
Thompson, Albert ..... St. James
Thompson, Arthur ..... Cokato
Thompson, F. A. ..... St. Paul
Thompson, G. J. ..... Rochester
Thomson, J. M. ..... Brownsdale
*Thordarson, Theodore ..... Minneota
Thoreson, M. O. ..... South St. Paul
Thorson, E. O. ..... Luverne
Thorson, O. P. ..... Northfield
Thysell, D. M. ..... Minneapolis
Thysell, F. A. ..... Moorhead
Thysell, V. D. ..... Hawley
Tibbetts, M. H. ..... Duluth
Tierney, C. M. ..... Harmony
Tifft, C. R. ..... St. Paul
Tilderquist, D. L. ..... Duluth
Tillisch, J. H. ..... Rochester
Tinker, C. W. ..... Stewart
Tingdale, A. C. ..... Minneapolis
Tingdale, Carlyle ..... Hibbing
Tischer, E. P. ..... Rochester
Tofte, Josephine B. ..... Minneapolis
Tooke, T. B., Jr. ..... Rochester
Torgerson, W. B. ..... Oklee
Townsend, De Wayne ..... Brooten
Traeger, C. A. ..... Faribault
Trandem, C. Elinor ..... Rochester
Traxler, F. J. ..... Henderson
Tregilgas, H. R. ..... So. St. Paul
Trommald, Gladys B. K. ..... Brainerd

Troost, H. B.....Mankato
Trueman, H. S.....Minneapolis
Trutna, T. J.....Silver Lake
Trytten, E. G.....Coleraine
Tunstead, H. J.....Minneapolis
Tuohy, E. B.....Rochester
Tuohy, E. L.....Duluth
Turnacliff, D. D.....Minneapolis
Tweedy, G. J.....Winona
Tweedy, J. A.....Winona
Tweedy, R. B.....Winona
Twyman, R. A.....Rochester
Tyrrell, C. C.....Minneapolis

Ude, W. H.....Minneapolis
Uhley, C. G.....Crookston
Uihlein, Alfred.....Rochester
Ulrich, H. L.....Minneapolis
Undine, C. A.....Minneapolis
Urberg, S. E.....Duluth
Usher, F. C.....Rochester

Vaaler, Torvald.....Cannon Falls
Vadheim, A. L.....Tyler
Vadheim, J. L.....Rochester
Vail, J. B.....Henning
Valentine, W. H.....Tracy
Vandersluis, C. W.....Bemidji
Van Slyke, C. A.....St. Paul
Van Valkenberg, J. D.....Floodwood
Vaughan, V. M.....Truman
Vaughn, L. D.....Rochester
Veirs, D. M.....St. Paul
Veirs, Ruby J. S.....St. Paul
Venables, A. E.....St. Paul
Vercellini, C. H. E.....Duluth
Vezina, J. C.....Mapleton
Vickers, P. M.....Rochester
Vik, A. E.....Minneapolis
Vik, Melvin.....Onamia
Virnig, M. P.....Wells
Vogel, H. A. L.....New Ulm
Vogel, J. H.....New Ulm
Von der Weyer, W. H.....St. Paul

Waas, C. W.....St. Paul
Wadd, C. T.....Waseca
Wagener, H. P.....Rochester
Waggoner, R. P.....Rochester
Wahlberg, E. W.....Sleepy Eye
Wahlquist, H. F.....Minneapolis
Waisman, Morris.....Rochester
Wakefield, E. G.....Rochester
Walch, A. E.....Minneapolis
Waldron, C. W.....Minneapolis
Walfred, K. A.....St. Cloud
Walker, A. E.....Duluth
Walker, A. E.....St. Paul
Walker, G. H.....Winona
Wall, C. R.....Minneapolis
Wallace, M. O.....Duluth
Waller, J. D.....Wilmont
Walsh, J. J.....Rochester
Walsh, M. N.....Rochester
Walter, C. W.....St. Paul
Walters, Waltman.....Rochester
Wangensteen, O. H.....Minneapolis
Wanous, E. Z.....Minneapolis
Ward, A. W.....Minneapolis
Ward, P. A.....Minneapolis
Warham, T. T.....Minneapolis
Warnock, R. W.....St. Paul
Warren, C. A.....St. Paul
Warren, E. L.....St. Paul

•Deceased

Warren, F. S.....Washington, D. C.
Warner, J. J.....Perham
Wasson, L. F.....Alexandria
Watkins, C. H.....Rochester
Watson, A. M.....Royalton
Watson, B. A.....Minneapolis
Watson, C. G.....Soudan
Watson, C. J.....Minneapolis
•Watson, J. A.....Minneapolis
Watson, P. T.....Cass Lake
Watson, W. J.....Holdingford
Watz, C. E.....St. Paul
Waugh, J. M.....Rochester
Weaver, P. H.....Faribault
Webb, R. C.....Minneapolis
Webber, E. E.....Duluth
Webber, F. L.....St. Paul
Weber, H. M.....Rochester
Webster, L. J.....Battle Lake
Weed, V. A.....Red Lake Falls
Weir, J. F.....Rochester
Weisberg, Maurice.....St. Paul
Weiser, G. B.....New Ulm
Weisman, S. A.....Minneapolis
Weismann, R. E.....Rochester
Welch, M. C.....St. Paul
Wellman, T. G.....Virginia
Wells, A. H.....Duluth
Wells, W. B.....Jackson
Welton, P. C.....Nopeming
Wenner, W. T.....St. Cloud
Wentworth, A. J.....Mankato
Wenzel, G. P.....St. Paul
Werner, O. S.....Cambridge
West, E. J.....Faribault
Westby, Magnus.....Madison
Westby, Nels.....Madison
Westerman, A. E.....Montgomery
Westerman, F. C.....Montgomery
Westrup, J. E.....Rochester
Wethall, A. G.....Minneapolis
Wetherby, Macnider.....Minneapolis
Weum, T. W.....Minneapolis
Wheeler, D. W.....Duluth
Wheeler, M. W.....St. Paul
Whetstone, S. D.....Winona
Whitacre, J. C.....St. Paul
White, A. A.....Minneapolis
White, S. M.....Minneapolis
White, W. D.....Minneapolis
Whitesell, L. A.....Minneapolis
Whitmore, F. W.....St. Paul
Whittemore, D. D.....Bemidji
Widen, W. F.....Minneapolis
Wiechman, F. H.....Montgomery
Wiig, L. M.....Naperville, Ill.
Wilcox, A. E.....Minneapolis
Wilcox, L. E.....Rochester
Wildebush, F. F.....Minneapolis
Wilder, K. W.....Minneapolis
Wilder, R. L.....Minneapolis
Wilder, R. M.....Rochester
Wilken, P. A.....Minneapolis
Wilkinson, Stella L.....Newport
Wilkowske, R. J.....Owatonna
Will, C. B.....Bertha
Will, W. W.....Bertha
Willcutt, C. E.....Minneapolis
Williams, A. B.....St. Paul
Williams, C. A.....Pipestone
Williams, C. K.....St. Paul
Williams, H. L., Jr.....Rochester
Williams, H. O.....Lake Crystal
Williams, J. A.....Slayton
Williams, L. A.....Slayton
Williams, M. R.....Cannon Falls
Williams, R. V.....Rushford

Williams, Robert.....Minneapolis
Williamson, G. A.....St. Paul
Willius, F. A.....Rochester
Willson, D. M.....Rochester
Wilmot, C. A.....Litchfield
Wilmot, H. E.....Litchfield
Wilson, C. E.....Blue Earth
Wilson, I. H.....Worthington
Wilson, J. A.....St. Paul
Wilson, J. V.....St. Paul
Wilson, L. B.....Rochester
Wilson, R. B.....Rochester
Wilson, R. H.....Winona
Wilson, V. O.....Minneapolis
Wilson, W. E.....Northfield
Wilson, W. F.....Lake City
Wilson, W. H.....Rochester
Winer, L. H.....Minneapolis
Wingquist, C. G.....Crosby
Winnick, J. B.....St. Paul
Winter, J. A.....Duluth
Winther, Nora M. C.....Minneapolis
Wipperman, F. F.....Minneapolis
Witham, C. A.....Minneapolis
Withrow, M. E.....International Falls
Wittich, F. W.....Minneapolis
Wohlrabe, A. A.....Minneapolis
Wohlrabe, C. F.....Nicollet
Wohlrabe, E. J.....Springfield
Wold, K. C.....St. Paul
Wolfe, H. H.....St. Paul
Wolff, H. J.....St. Paul
Wolkoff, H. J.....St. Paul
Wollaeger, E. E.....Rochester
Wolner, O. H.....St. Peter
Woltman, H. W. F.....Rochester
Wood, B. J.....Rochester
Wood, H. G.....Rochester
Woodruff, C. W.....Chatfield
Woodruff, Robert.....Rochester
Woods, R. M.....Rochester
Woodworth, Elizabeth A.....Minneapolis
Woodworth, L. F.....Le Center
Workman, W. G.....Tracy
Wozencraft, J. P.....Rochester
Wray, W. E.....Campbell
Wright, C. B.....Minneapolis
Wright, C. D.....Minneapolis
Wright, C. O.....Luverne
Wright, F. R.....Minneapolis
Wright, S. G.....Minneapolis
Wright, W. S.....Minneapolis
Wrork, D. H.....Rochester
Wulf, R. F.....Rochester
Wunder, H. E.....Shakopee
Wylie, A. R. T.....Faribault
Wynne, H. M. N.....Minneapolis

Yaeger, W. W.....Marshall
Yeager, C. L.....Rochester
Ylvisaker, R. S.....Minneapolis
Yoerg, O. W.....Minneapolis
Young, H. H.....Rochester
Young, T. O.....Duluth
Young, V. A.....Duluth
Younger, L. I.....Winona
Youngren, E. R.....St. Paul

Zachman, A. H.....Melrose
Zachman, L. L.....St. Paul
Zander, C. H.....St. Paul
Zaworski, E. A.....Minneapolis
Zemke, E. E.....Fairmont
Zierold, A. A.....Minneapolis
Zimmermann, H. B.....St. Paul
Ziskin, Thomas.....Minneapolis
Zlatovski, M. L.....Duluth